

HUGHES F MAINTENANCE PROJECT

DSL - AMRB No. 94-M03

FINAL REPORT

Judith Basin County in Central, Montana



June 28th, 1995

SPECTRUM ENGINEERING

Billings, Montana



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FINAL REPORT

**HUGHES F
MAINTENANCE PROJECT
MT DSL-AMRB No. 94-M03**

Judith Basin County, Montana

Site Located in Central, Montana

T15N, R12E, NE¼ of Section 21

June 28th, 1995

Spectrum Engineering
1413 4th Avenue North
Billings, Montana 59101

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HUGHES F MAINTENANCE PROJECT

1. INTRODUCTION

1.1 Project Description

The Hughes F Maintenance Project was one of two satellite contracts which were designed to supply the Lehigh Project with an on-site supply of lime kiln dust. The Lehigh Project would use the kiln dust to permanently neutralize the acid generating potential of coal waste which had been placed in several disposal areas near Lehigh during a previous AMRB project. The Hughes F Maintenance Project was implemented to haul 18,900 tons of lime kiln dust from the Continental Lime plant near Townsend and to place this material in storage pits located near Lehigh. The lime kiln dust had been purchased by the AMRB under the Kiln Dust Lime Supply Project MT DSL-AMRB No. 94-M02 for use in the Lehigh Project.

1.1.1 Location and Access

The Hughes F Maintenance Project is located 3½ miles southwest of Windham in the NE¼ of Section 21, T15N, R12E in Judith Basin County. General access is by proceeding 67 miles east from Great Falls on Highway 87 to its junction with Secondary 541 near Windham. Then proceed southwest on 541 approximately one mile to an improved gravel road which branches off the right side of the highway and continues to the southwest as the highway turns toward the south. The abandoned town of Lehigh is located approximately 2.8 miles up this gravel road. A large concrete loadout structure marks the location of the mine at Lehigh. The site is situated on the ridge about ½-mile to the north. The Hughes F Maintenance Project site is found on the 7½ minute USGS quadrangle named Windham, Mont. at latitude 47°03'05" and longitude 110°12'18".

1.1.2 Land Ownership

The site is owned by the following landowner:

Gayle Evans
P.O. Box 3156
Stanford, MT 59479
(406) 566-2509

1.1.3 History

A history of mine development in the area surrounding this site can be found in the *Historical and Cultural Survey of Selected Abandoned Mine Sites in the State of Montana* by Historical Research Associates, Missoula, Montana dated March 19, 1982. The section on the Hughes Complex - Mine F refers to this site. The Seaman Mine was the first mine of note in this area.

Previous reclamation work on this site occurred during the Lehigh Abandoned Mine Reclamation Project which was bid on October 31, 1989. This contract was awarded to Montgomery Construction of Hilger, Montana. The main objective of this project was to remediate impacts associated with a large coal slack pile located in a coulee near Lehigh. This pile was the main coal waste disposal area for the Cottonwood Coal Company's underground mine at Lehigh. The Lehigh mine accessed the coal seam from a 208 foot deep shaft and began production in 1914. The Cottonwood Coal Company was a subsidiary of the Great Northern Railroad. The

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mine was developed to supply coal for the railroad after production out of their mines in Sand Coulee and Stockett proved inadequate. The peak production years were from 1918-1919. The mine at Lehigh was closed in 1921 after a labor dispute. The mine closure led to the abandonment of the town which had a population of 5000 people by then.

The mine and wash plant at Lehigh were capable of producing over 2500 tons/day. A conveyor was originally used to carry waste products from the facilities to the disposal area. In 1917, an aerial tramway was constructed. It is estimated that the disposal area eventually received as much as 225,000 cubic yards of wash plant and mine wastes. The pile bridged a coulee in the North Fork Sage Creek drainage creating an impoundment. Water seeping through the pile eventually created an acid mine drainage problem which effected 10-15 acres of range land. In 1983, the AMRB attempted to reduce the acidic seepage by placing a heavy clay liner on the upstream face of the pile; however, this liner was ineffective. The Lehigh Abandoned Mine Reclamation Project in 1989-1990, moved a reported 200,400 cubic-yards of this waste pile to a 10 acre disposal area located on the slopes of the coulee adjacent to the waste pile. This material was compacted in lifts, graded, limed at the rate of 20 tons/acre, covered with an 8-inch layer of salvaged soil, and revegetated.

Potential problems resulting from the reclamation of the Lehigh coal waste pile were first observed by AMRB staff during the summer of 1991. At that time, vegetation was in moderate to good condition on the majority of the reclaimed site: but, several areas were either unvegetated or exhibited poor growth. In addition, much of the reclaimed coulee bottom was unvegetated and salt efflorescence were observed along the banks of the coulee.

In 1991 and 1992, Chen-Northern, Inc. was assigned several tasks designed to evaluate acidic seeps and the potential for soil acidification in the area where the 1989-1990 project had deposited the Lehigh coal wastes. The Chen-Northern studies concluded that additional monitoring and study would be required to select the most suitable remediation alternative. However, their February 1992 report states; "that acidification of the coversoil will eventually occur. This process will probably occur over an extended period of time and the resulting effects on the vegetative cover may not be realized for many years." Their preliminary recommendation was to move the coal waste to a more suitable location and to encapsulate the coal waste in a constructed disposal site which would be excavated and could provide 4-feet of capping material.

In May 1994, Dr. Doug Dollhopf, et al from the Reclamation Research Unit at Montana State University were contracted to determine the total lime requirement to permanently neutralize the entire coal waste mass. It was recommended that 300-307 tons of CaCO_3 or CaO / 1000 tons of coal waste be applied. The study estimated that 205,550 cubic yards of coal waste would be neutralized if the entire mass was treated.

1.2 Project Objectives

The project objective was to provide an on-site supply of lime kiln dust for neutralization of acid generating coal waste during the forthcoming Lehigh Project (DSL-AMRB 94-002).

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2. RESPONSIBLE PARTIES

2.1 Contractor

The successful bidder was Century Companies, J.V.. Their address is shown below:

Century Companies, J.V.
P.O. Box 739
Lewistown, MT 59457
Phone: 406/538-2334

Century sub-contracted the haulage portion of the work to:

Transystems, Inc.
1501 Third Street N.W.
Great Falls, MT 59404
Phone: 406/727-7500

2.2 Reclamation and Engineering Plan

Spectrum Engineering was assigned the responsibility of preparing engineering plans and specifications for this project. The design phase was limited to storage pit design and bid package preparation.

Spectrum's address is shown below:

Spectrum Engineering
1413 4th Avenue North
Billings, Montana 59101
Phone: 406/259-2412

2.3 Quality Control Inspection

Spectrum Engineering performed the quality control inspection. Vern Heisler performed project engineering functions and Hank Lowe provided the construction inspection. Spectrum's address is above under Section 2.2.

2.4 AMRB Coordination

The AMRB Project Manager was Joel Chavez, Montana Department of State Lands, Abandoned Mine Reclamation Bureau.

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3. CHRONOLOGICAL LISTING OF EVENTS

3.1 Pre-Bid Conference

A pre-bid conference was held at the site near Lehigh on October 12th, 1994. Joel Chavez represented the AMRB and Vern Heisler represented Spectrum Engineering. The meeting was attended by three prospective contractors.

3.2 Bid Date

The bid opening date was October 20th, 1994 at 2:00 p.m. at the Montana Department of State Lands, Abandoned Mine Reclamation Bureau's office, 1625 Eleventh Avenue, Helena, Montana.

3.3 Lowest Bids

Four (4) qualified bidders responded to the solicitation. Bidders included: Shumaker Trucking and Excavating, Century Companies J.V., Montgomery Construction and Donnes Construction. The low bid of \$377,821.00 was submitted by Century Companies J.V.. The Engineer's estimate was \$460,998.00. The bid tabulation is presented in ATTACHMENT 1.

3.4 Contract Award

The contract was awarded to Century Companies J.V. of Lewistown who was the low bidder. The prime contractor's address is shown under 2.1 Contractor above.

3.5 Contract Agreement

The Contract Agreement was signed November 21st, 1994. The Notice to Proceed was issued on December 12th, 1994 for a starting date of December 12th, 1994. The term of the contract was to be divided into Fall and Spring periods. Each period was to last sixty (60) consecutive calendar days. The anticipated completion date for the Fall '94 contract period was February 9th, 1995. The number of calendar days for the contract period was subsequently increased by 4 days. A notice to proceed with the Spring '95 contract period was not issued due to delays and disputes arising during the first period. Subsequently, May 31st, 1995, was negotiated as the scheduled completion date for all work under the Contract.

3.6 Construction Start-up

A pre-construction conference was held at the AMRB's office in Helena on December 7th, 1994. Century Companies J.V. started work on December 12, 1994. The first trench was completed by December 21, 1994. Fabrication of the specified dust control cover for the pit caused the first delay. After a series of disputes, kiln dust haulage began on March 31, 1995.

3.7 Change Orders

Three Change Orders were written for this project. Copies of the Change Orders are included in ATTACHMENT 2 of this report. Change Order No. 1 was issued to combine the Fall '94 kiln dust haulage tonnage with the Spring '95 tonnage. An additional 4 days were granted at this time and a completion date of May 31, 1995 was specified. Change Order No. 2 was issued

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to pay the Contractor \$6,760.50 for relocating stockpiles and constructing roads along each trench in order to implement an alternative approach to filling the storage trenches after the design system failed. Change Order No. 2 was also used to pay the Contractor \$2,730.00 to purchase dust abatement fabric. In addition, Change Order No. 2 was used to pay the Contractor \$9,676.50 for extra costs incurred through April 31, 1995 for truck delays, additional personnel, and additional equipment required to transfer the kiln dust from the trucks into the storage pits. This adjustment was made because the kiln dust failed to flow into the trenches as planned. Adjustments, which totaled -\$33,074.59, were required in Change Order No. 3 to correct the estimated quantities to actual measured quantities for completed bid items. Bid unit prices were used for the adjustment of bid and actual quantities. The changed quantities included additional water (+\$300), a reduction in storage trench excavation (-\$980), a reduction in the number of trenches which utilized covers (-\$6,400), complete elimination of all fencing (-\$4,571), and a reduction in the tonnage of lime kiln dust (-\$27,013.14). Change Order No. 3 also provided an additional \$300 for the purchase of a culvert and \$5,289.55 for additional personnel equipment required to transfer the kiln dust from the trucks into the storage pits during the month of May. Change orders amounted to a net decrease of \$13,907.59 for the project.

3.8 Work Stoppages

Century Companies J.V. started work on December 12th, 1994 and completed work on May 30, 1995. A winter shutdown commenced on January 17, 1995 after four (4) days had been added to the contract time due to temporary shutdowns. Work restarted at Lehigh on March 30, 1995. One test load of kiln dust was hauled on March 31, 1995. Actual haulage started on April 6, 1995. The original contract period was for 120 days which were split into two contract periods of sixty (60) days each. The contract period was extended to 124 days. The contractor spent 36 days prior to the winter shutdown and 62 days after the winter shutdown for a total of 98 days.

3.9 Requests for Payment

Three payment requests were made during this project. A copy of each Pay Request is included in ATTACHMENT 3. A 10-percent retainage was withheld on the first two requests. The payment amount for each request is shown below:

| | | |
|-------------|--------------------------|--------------|
| No. 1 | 12/12/1994 to 01/12/1995 | \$ 67,968.00 |
| No. 2 | 01/13/1995 to 04/30/1995 | \$127,815.30 |
| No. 3-Final | 05/01/1995 to 06/01/1995 | \$168,130.11 |

3.10 Substantial Completion

The date of Substantial Completion was May 31st, 1995.

3.11 Final Completion and Approval

A field inspection by the AMRB took place on May 31st, 1995. No actual reclamation was involved in this contract. Consequently, final completion was issued on the same day.

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3.12 Final Payment

Final payment was made to the Contractor in late June, 1995. A copy of the payment request has been included in ATTACHMENT 3.

4. CONSTRUCTION

4.1 Description of Project Plan

A brief description of the plan for this project is presented below.

Lime Kiln Dust Source Area - The AMRB had purchased a supply of lime kiln dust from Continental Lime under Project MT DSL-AMRB No. 94-M02. This supply of lime kiln dust was located approximately 6 miles west of Townsend, in a storage pit in Section 33, T7N, R1E, Broadwater County, Montana. Continental Lime stored this material with a "cake" on the surface to prevent dust from being released to the environment. This area can be accessed by leaving Highway 287 just north of Townsend across the Missouri River, turning on the paved road to the west of Highway 287 and proceeding to the Continental Lime Plant.

The contractor would be required to load the lime kiln dust into trucks at the pit. Because the kiln dust is a fine powder, loading of the lime kiln dust would need to be completed in a manner that would minimize the amount of material being released to the environment. The contractor would be required to have his loading plan approved by the owner prior to construction. If belly dump trailers were used to transport the material, rubber seals on the gates and tarping would be required. Respiratory equipment approved for use with lime kiln dust would be required for those persons in close contact with the lime kiln dust. It was anticipated that some portion of the kiln dust would be found to have solidified into large blocks. As these blocks were encountered during excavation, they would be separated and left in the supplier's pit. We planned to use the truck scales at the Continental Lime Plant to measure the number of tons of lime kiln dust hauled.

During the planning stage of the project, Continental Lime indicated that they would not have sufficient supplies available through the end of 1994 to meet all of the project's requirements for kiln dust. They also indicated that it would be beneficial if the AMRB could haul away their current stockpile during the Fall of 1994; so, they could use this storage area for their winter production. Consequently, Fall 1994 and Spring 1995 hauling periods would need to be specified in the Contract.

Lime Kiln Dust Storage Trenches - The lime kiln dust would be transported approximately 160 miles to storage trenches which would be situated along the top of a hill near the abandoned town of Lehigh. It was anticipated that the Contractor might want to modify the access road to the top of the hill to improve the haulage conditions. This might include adding culverts.

The storage area would be prepared by stripping and stockpiling all available coversoil from the disturbed area. A minimum six (6) inch stripping depth would be specified. The lime kiln dust storage trenches would be excavated in two trench "systems". Three of these two trench systems would be excavated in the Fall of 1994; and, two of these systems would be excavated in the Spring of 1995. The exact locations of these trenches would be staked in the field by the

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engineer. A fence would be installed surrounding the trenches and stockpiles. Fence materials would meet the requirements of Technical Specification 520.00 Farm Fence.

As envisioned in the plan, the trenches would be built in pairs with the excavated material used to build a center embankment which would be used as a platform for transferring the kiln dust from belly dumpers into the storage trenches. Additional material would be stacked on the outside of each trench to hold down a dust abatement fabric which would cover the active trench. The dust abatement fabric material would meet the requirements of Standard Technical Specification 340.00 Erosion Control Mat. This fabric would be stretched across the trench with 4 feet of overlap provided on every side. Fifteen inches of excavated material would be placed on this overlap to hold the cover in place.

A typical trench would be 8 feet deep and would be 250 feet long x 15 feet wide at the bottom. At the top the trench would be 24 feet wide. It would have 3H:1V ramps at both ends making it around 300 feet in total length.

In order to transfer the kiln dust into the trench, a belly dump truck would drive along the top of the center embankment and discharge its load into one of three drive-over hoppers that would feed into chutes. This embankment would be 6½ feet high, would be 54 feet wide at the bottom, and would have an 8 foot wide traveling surface along the top. A 60 foot long ramp would be constructed at both ends. The chutes would be constructed on 79 foot centers at right angles to the trench and would slope into the trench at 5½H:1V. The Contractor could choose to employ an auger or a bin shaker within the chute to induce the material to run into the trench. After discussing material handling with the producer, it was believed that the flow and stacking characteristics of the kiln dust would be such that it would spill down the chute and spread out in the trench.

After a trench had been filled with kiln dust, water would be applied to the top of the kiln dust to form a cake. If possible this water would be applied through the pores within the dust abatement fabric. Once the cake on the top of the lime kiln dust within the trench is produced, the dust abatement fabric would be removed and used on the next trench

4.2 Major Equipment List

| <u>Type</u> | <u>Make/Model</u> | <u>Size/Horsepower</u> | <u>No. on Job</u> |
|-----------------------|-------------------------|------------------------|-------------------|
| Bulldozer | Caterpillar/D8 | 191 Hp | 1 |
| Scraper | Terex/TS18 | 18 yd/295F-225R Hp | 2 |
| Excavator | John Deere/690C | 0.88 yd/125 Hp | 1 |
| Loader | Hough/90 Payloader | 5 yd | 1 |
| Grader | Caterpillar/14E | 150 Hp | 2 |
| Grader | Gallon/T500 | 150 Hp | 1 |
| Water Truck | Intern'l/Load Star 1800 | 2500 Gal | 1 |
| Truck/trailer | Ford 800 | | 1 |
| Tractor/Trailer & Pup | FreightLiner | 42 Ton | 5-12 |
| Water Truck | MC | 4000 Gal | 1 |
| Skid Steer Loader | Bobcat | | 1 |

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4.3 Contractor Employees

The contractor had from three (3) to nine (8) employees working at the Lehigh storage site and the Townsend loading site on various days. In addition, Transystems, Inc. out of Great Falls provided the fleet of trucks and drivers to haul the lime kiln dust.

4.4 Construction Activities

On 12-7-94 a pre-construction meeting was held at the DSL office in Helena. Pursuant to those discussions the Notice to Proceed was changed from Dec. 1st to Dec. 12th, 1994. Century also requested that all lime kiln dust hauling be shifted to the Spring of 1995. This request was denied by the AMRB Chief. Then on December 9th, a meeting with the landowner was held at Lehigh. Pit and road locations were worked out.

Century mobilized equipment on December 13th and 14th. Most of the equipment was borrowed from Montgomery Construction. From December 15th-17th, Century had four operators at the Lehigh site using a D-8 bulldozer, two TS-18 scrapers, and a motor grader stripping coversoil and excavating trenches for Trench Systems #1 and #2.

During the second week of construction, the contractor worked his crew of four operators four days using the same equipment spread of a bulldozer, two scrapers and a grader to complete excavating all three trench systems for 1994. Century ordered the dust abatement fabric from a Billings supplier. However, the fabric had to be sewn together to make the trench covers. The fabrication had to be done at the factory in Georgia. Due to the holidays, the covers could not be supplied until mid-January. Century then requested authorization and received approval to construct the 1995 trenches. Coversoil salvage for the 1995 trenches started on 12-22-94. Century gave its operators a Christmas holiday from Dec 23-27th.

The next week was also shortened due to the holidays. Century work on December 28th and 29th constructing Trench System #4 and starting on #5 with the same four operator crew and equipment spread.

Century started back up Tuesday morning, January 3, 1995 and worked through January 5th using the same crew and equipment. They had all the trenches and the basic embankments between trenches constructed by Jan 4, 1995. They spent the remainder of the time modifying the access road from the old Lehigh loadout up the hill to the storage site. This work consisted of installing culverts and building up some dips in the road.

The five pairs of storage pits which Century constructed were 7-9 feet deep and 17-20 feet wide. One pair was 300 feet long, while the rest were 250 long as measured along the bottom. Each trench had a 3H:1V ramp at both ends as specified. Embankments were constructed between each pair of trenches to serve as platforms for a hopper and chute arrangement which was to be used for transferring the lime kiln dust from the trucks. Century used the basic design shown on the typical drawings which had been included with the Contract Documents. However, Century cut the trenches nearly vertical along the sides and had to clean out the trenches after the sides slumped over the winter. In addition, the chutes and hoppers were only built into the embankment at Trench System #2 because the designed transfer arrangement was abandoned after a few loads went through the system on the first trench.

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After January 5th, 1995, Century did not return to work until March 30, 1995. An approved Winter Shutdown was authorized to commence on January 17th, 1995. During the shutdown, Spectrum Engineering's construction inspector, put-up temporary fencing; so, the landowner could move cattle into an adjacent pasture. The fencing portion of the contract was subsequently deleted from the job.

On March 30-31, 1995, Century had a crew of three people operating an hydraulic excavator and a motor grader to grade the roads and to prepare trench system #2. They cleaned-out sloughed material from the trenches, installed covers, and started constructing hoppers and chutes in the embankment. A trial load was dumped using the designed transfer method on March 31st. Material hung-up in the hopper during the trial.

From April 4-6, 1995, three operators and a supervisor were at the Lehigh site. They continued to use the hydraulic excavator and the motor grader along with a wheel loader to construct chutes and hoppers in the embankment of trench system #2 and to install the first two fabric trench covers. On April 6th, six loads of lime arrived from Townsend. During the unloading, the kiln dust did not flow as had been anticipated; consequently, the designed transfer system failed to perform. Over the next two days, 15 more loads of lime kiln dust were received. Century scrapped the designed transfer system and began constructing a road along the side of each trench opposite the middle embankment so the trucks could dump along the edge of the trench. The wheel loader and the motor grader were then used to push the material into the trench. The revised transfer system did not employ any engineered controls for dust abatement. The trench covers were deleted for the rest of the trenches. To complicate the situation, rain soaked the dirt haul road to the top of the ridge making the haul difficult. Two trucks got stuck and couldn't be pulled free for several days. Century decided to let the roads dry out before attempting to fix the road and haul again.

At the supplier's storage area in Townsend, Century employed a wheel loader to load the belly dump trucks. After loading, each truck was weighted. If the load was either too heavy or too light, the truck had to go back into the loading area where the load could be adjusted. The truck then had to be reweighed. This process might take several attempts to get an optimum load.

Century had two operators and a supervisor out on April 12th and 13th trying to regrade the road and add some gravelly material to the base. On April 13th, they got the trucks unstuck and received 12 more loads. They also employed the hydraulic excavator to continue building roads along the trenches. However on April 14th, it was raining hard and they decided to hold off hauling until the next week.

On April 17th, it was still too wet to haul, so Century worked on the road and on embankment excavation. On April 18th, the trucks started running again. From April 19th-22nd, the trucks cycled twice a day which required the crew at Lehigh to receive 22 loads per day. On average each truck hauled a little more than 40 tons of lime kiln dust. The motor grader and wheel loader continued to push the material into the trenches and to assist an occasional truck. The hydraulic excavator continued to work during this period and finally finished building roads along the trenches.

During the week of the 24th of April 1995, the contractor generally had bad weather. But, in three days of hauling, 43 loads were put into storage. Century decided to request a change

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order for the extra work required to transfer the lime kiln dust from the trucks and into the trenches. The excavator was removed from the site.

During the first week of May, Century worked 6 days putting from 5 to 13 loads of lime kiln dust into storage per day. They had reduced the Lehigh receiving crew to 2 operators. The grader and loader continued to push the material into the trenches. The loader was used mostly to pull trucks up the hill or through the dumping area along the trenches.

From May 9th-11th, the trucks were again making two runs per day. On the 12th and 13th, the assigned drivers took a mandatory rest. Century brought in another excavator from Youderian Construction to redistribute the material in the trenches. The excavator worked on the 11th and 12th. Hauling resumed on the afternoon of May 14th. From the 15th-20th, Lehigh was receiving 10-13 loads per day with the trucks making two runs per day.

During the week of May 22nd, 1995, hauling continued. The trucks hauled 5 loads on Monday then made two runs per day through the 25th to average 13 loads per day. On the 24th, Century brought in concrete block, poles, and a crew of five to anchor the trench covers. Transystems terminated the hauling operations at the end of the day on May 25th, 1995. With 16,970.49 tons of lime kiln dust in the storage trenches at Lehigh, the AMRB Project Manager agreed to end the job.

On May 30th, 1995, Century cleaned up the work site, sprayed water on the top of each trench to form a cake, fixed the access road for the landowner and demobilized.

4.5 Quantities Used

All work items except mobilization and work on the water main were bid on a unit price basis. An on-site construction inspector measured items for payment and recorded load counts. Bid quantities were adjusted based on field measurements.

| <u>Item</u> | <u>Amount</u> | <u>Unit Cost</u> |
|--|----------------|---|
| PROVIDE WATER | 14.5 KGal | \$100.00 per KGal |
| IMPROVE ACCESS ROAD | 0.6 Miles | \$10,000.00 Per Mile |
| SALVAGE AND STOCKPILE COVERSOIL | 7720 CY | \$1.00 per CY |
| EXCAVATE STORAGE TRENCHES AND BUILD EMBANKMENTS | 15,250 CY | \$2.80 per CY |
| PROVIDE DUST ABATEMENT FABRIC | 5600 Sq Yd | \$ 0.86 per Sq Yd |
| COVER TRENCHES WITH DUST ABATEMENT FABRIC | 2 Trenches | \$800.00 per Trench |
| KILN DUST - LOAD, HAUL 155 MILES, AND PLACE IN STORAGE TRENCHES | 16,970.49 Tons | \$14.80 per Ton \$0.095 per Ton-Mile |

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5. PAYMENT REQUESTS

5.1 Pay Request

Three pay requests were processed for this project as addressed under Section 3.9 above. Copies have been included in ATTACHMENT 1.

5.2 Cost per Site

As a satellite project, the Hughes F Maintenance Projects represents a portion of the total site cost for the Lehigh Project. The total site cost for the entire Lehigh project is presented in the Lehigh Project Final Report. The lime kiln dust purchase price was \$6.00/ton from Continental Lime and Century Construction's original bid was \$14/ton for lime delivery.

5.3 Total Project Cost

The total project cost was \$426,388.19. Of this total, the construction cost for the project was \$363,913.41. Century Companies J.V. was awarded the contract for an original bid of \$377,821.00. Three change orders were issued for a net decrease of \$13,907.59.

Total engineering costs for the project amounted to \$62,474.78 or about 17 percent of the construction cost. It cost \$14,271.35 to develop plans and specification, prepare 30 bid packages, attend a pre-bid conference and respond to bidder questions. Construction inspection and quantity accounting, construction management, and final report preparation required an expenditure of \$48,203.43. An analysis of the engineering costs versus construction costs is presented in ATTACHMENT 4.

6. PROJECT SUMMARY

6.1 Summary of Project

Spectrum Engineering was assigned the task of preparing plans, specifications, and three separate bid packages for lime kiln dust purchase, for lime kiln dust haulage, and for remediation of the acid generating coal wastes at Lehigh. Subsequently Continental Lime's Indian Creek Plant at Townsend was awarded the contract to supply the lime kiln dust at a bid price of \$6.00 per Ton FOB at the plant. Century Companies J.V. who was the low bidder was awarded the contract to haul the lime to the Lehigh site and to place the lime kiln dust in storage trenches which they would construct. The lime hauling contract was bid on October 20th, 1994. However, a contract was not signed until November 21st, 1994.

Century Companies J.V. started work on December 12th, 1994 and completed work on all ten of the storage trenches and access road improvements by January 17, 1995 when a winter shutdown commenced. Century constructed five pairs of storage pits with an embankment between each pair of trenches to serve as platform for a hopper and chute arrangement which was supposed to transfer the lime kiln dust from the trucks into the trenches.

From the time the contract was awarded until the winter shutdown, Century raised serious objections to the planned Fall 1994 hauling requirement. The tonnage in this bid item was

HUGHES F MAINTENANCE PROJECT

ultimately combined with the Spring 1995 tonnage by Change Order 1. One test load of kiln dust was hauled on March 31, 1995. Actual haulage started on April 6, 1995 and continued through May 25, 1995. Transystems, Inc. from Great Falls supplied a fleet of belly dump truck/trailer rigs capable of hauling 40-43 tons per trip.

After haulage began, it soon became apparent that the transfer arrangement, which relied on an assumption that the kiln dust would flow down a chute and spread out in the trench, would not work. This transfer arrangement was abandoned. Roads were constructed along each trench so a motor grader and loader could be used to push the lime kiln dust into the trenches after it was dumped along the side. An excavator had to be used to distribute the lime kiln dust in the trench. This proved to be a very dusty operation causing a few of the truck drivers to refuse to work on this job. By May 25, 1995, all parties agreed to stop hauling with 16,970.49 tons having been delivered to Lehigh.

6.2 Site Condition after Completion

The project delivered 16,970.49 tons of lime kiln dust to a series of ten storage trenches near Lehigh. Coversoil and unclassified material stockpiles were left at the site for reclamation of this site during the Lehigh Project.

6.3 Maintenance or Follow-up

There will be no maintenance follow-up required for this contract because the storage pits will be reclaimed under a separate contract.

6.4 Construction Bid Package

Copies of the site plan drawings which were provided in the bid package are located in ATTACHMENT 5 at the back of the final report. These site plan drawings represent the reclamation engineering design (the plan from which the contractors bid the work).

6.5 As-Built Drawings

The as-built drawings are located in ATTACHMENT 6.

7. COMMENTS/SUGGESTIONS

The transfer scheme which was presented with the bid documents was developed with the cooperation of Continental Lime's staff. This scheme failed because the product wouldn't flow with any consistency. The percentage of large chunks in the product or possibly differences in moisture content may contribute to this problem.

A material handling feasibility trial at the supplier's facility might have been a valuable addition to the design phase of this project. Based on the results of this projects, an attempt to learn more about the handling characteristics of lime kiln dust should be made before another large scale stockpiling project is attempted. Although breathing protection was used, operators experienced skin irritation from this dust. Visibility problems were also experienced.

HUGHES F MAINTENANCE PROJECT

The design also assumed that all of the kiln dust would be 104% calcium carbonate equivalents based on Continental Lime's test results and that all of the material would pass the 60 mesh screen based on Dr. Dollhopf and ARCO past project results. These assumptions proved false which will present problems during the next project phase. The kiln dust tested 92% ECCE and only 80% of the material passed the 60 mesh screen.

8. PHOTOGRAPHS/SLIDES

8.1 Listing

A description of the photographs taken to document the work performed is found at the back of the final report under ATTACHMENT 7. The number on each picture corresponds to the listing which precedes the photographs. The pictures are organized according to the following topics:

| <u>PICTURES</u> | <u>TOPIC</u> |
|-----------------|---|
| 1-17 | Contractor's Equipment |
| 18-19 | Pre-Construction Lehigh Site |
| 20-48 | Storage Trench Construction |
| 49-55 | Access Road Modification |
| 56-61 | Continental Line Loading Site |
| 62-76 | Trail Dump Using the Designed Transfer System |
| 77-104 | Lime Kiln Dust Unloading and Handling |
| 105-114 | Clean-up |

ATTACHMENT 1

BID TABULATION

HUGHES F MAINTENANCE PROJECT
JUDITH BASIN COUNTY, MONTANA

DSL/AMRB 94-MO3
October 20, 1994

| BID TABULATIONS | | | | ENGINEER'S ESTIMATE | | CENTURY COMPANIES J.V. | | MONTGOMERY CONSTRUCTION | | DONNES CONSTRUCTION | |
|-----------------|--------------------|----------|---|---------------------|-------------|------------------------|------------|-------------------------|------------|---------------------|------------|
| Item Number | Estimated Quantity | Unit | Description | Unit Price | Total Price | | | | | | |
| 1. | 4 | L S | Mobilization | 35000.00 | 35,000.00 | 40000.00 | 40,000.00 | 15000.00 | 15,000.00 | 119000.00 | 119,000.00 |
| 2. | 11.5 | KGAL | Provide Water | 50.00 | 575.00 | 100.00 | 1,150.00 | 20.00 | 230.00 | 100.00 | 1,150.00 |
| 3. | 1 | Lump Sum | Modify Access Road to allow hauling of kiln dust to storage trenches | 640.00 | 640.00 | 6000.00 | 6,000.00 | 3500.00 | 3,500.00 | 2000.00 | 2,000.00 |
| 4. | 3700 | CY | Salvage and stockpile coversoil from the fall 1994 kiln dust storage trenches | 2.00 | 8,200.00 | 1.00 | 4,100.00 | 1.85 | 7,585.00 | 1.00 | 4,100.00 |
| 5. | 3620 | CY | Salvage and stockpile coversoil from the spring 1995 kiln dust storage trenches | 2.00 | 7,240.00 | 1.00 | 3,620.00 | 1.85 | 6,697.00 | 1.00 | 3,620.00 |
| 6. | 8700 | CY | Excavate kiln dust storage trenches and build embankments | 1.50 | 13,050.00 | 2.80 | 24,360.00 | 1.25 | 10,875.00 | 1.00 | 8,700.00 |
| 7. | 6900 | CY | Excavate kiln dust storage trenches and build embankments | 1.50 | 10,350.00 | 2.80 | 19,320.00 | 1.25 | 8,625.00 | 1.00 | 6,900.00 |
| 8. | 1400 | SY | Provide dust abatement fabric | .75 | 1,050.00 | 1.50 | 2,100.00 | 1.00 | 1,400.00 | 2.86 | 4,004.00 |
| 9. | 10 | Trenches | Place and remove dust abatement fabric on each trench | 320.00 | 3,200.00 | 800.00 | 8,000.00 | 2000.00 | 20,000.00 | 1000.00 | 10,000.00 |
| 10. | 10,500 | Tons | Load, haul the lime kiln dust to storage pits and place kiln dust in pits | 20.00 | 210,000.00 | 14.00 | 147,000.00 | 20.00 | 210,000.00 | 19.28 | 202,440.00 |
| 11. | 8,400 | tons | Load, haul lime kiln dust to storage pits and place kiln dust in pits | 20.00 | 168,000.00 | 14.00 | 117,600.00 | 20.00 | 20,000.00 | 19.28 | 161,952.00 |
| 12. | 2,530 | Feet | Farm Fence Type F-4M | 1.10 | 2,783.00 | 1.50 | 3,795.00 | 1.00 | 2,530.00 | .85 | 2,150.50 |
| 13. | 4 | Ea | Farm Fence Single Panel | 90.00 | 360.00 | 80.00 | 320.00 | 100.00 | 400.00 | 100.00 | 400.00 |
| 14. | 3 | Ea | Farm Fence Double Panel | 130.00 | 390.00 | 120.00 | 360.00 | 200.00 | 600.00 | 150.00 | 450.00 |
| 15. | 16 | Foot | Farm Fence Gate, Type F-4 | 10.00 | 160.00 | 6.00 | 96.00 | 200.00 | 3,200.00 | 10.00 | 160.00 |
| | | | | | 460,998.00 | | 377,821.00 | | 458,642.00 | | 527,026.50 |

HUGHES F MAINTENANCE PROJECT
JUDITH BASIN COUNTY, MONTANA

DSL/AMRB 94-MO3
October 20, 1994

| BID TABULATIONS | | | | ENGINEER'S ESTIMATE | | SHUMAKER TRUCKING AND EXCAVATING | | | | |
|-----------------|-----------------------|--------------|---|---------------------|----------------|-------------------------------------|------------|------|--|------|
| Item Number | Estimated Quantity | Unit | Description | Unit Price | Total Price | | | | | |
| 1. | 1 | L S | Mobilization | | 0.00 | 62000.00 | 62,000.00 | 0.00 | | 0.00 |
| 2. | 11.5 | KGAL | Provide Water | | 0.00 | 100.00 | 1,150.00 | 0.00 | | 0.00 |
| 3. | 1 | Lump Sum | Modify Access Road to allow hauling of kiln dust to storage trenches | | 0.00 | 35000.00 | 35,000.00 | 0.00 | | 0.00 |
| 4. | 4100 | CY | Salvage and stockpile coversoil from the fall 1994 kiln dust storage trenches | | 0.00 | 1.00 | 4,100.00 | 0.00 | | 0.00 |
| 5. | 3620 | CY | Salvage and stockpile coversoil from the spring 1995 kiln dust storage trenches | | 0.00 | 1.00 | 3,620.00 | 0.00 | | 0.00 |
| 6. | 8700 | CY | Excavate kiln dust storage trenches and build embankments | | 0.00 | 2.40 | 20,880.00 | 0.00 | | 0.00 |
| 7. | 6900 | CY | Excavate kiln dust storage trenches and build embankments | | 0.00 | 2.40 | 16,560.00 | 0.00 | | 0.00 |
| 8. | 1400 | SY | Provide dust abatement fabric | | 0.00 | 1.00 | 1,400.00 | 0.00 | | 0.00 |
| 9. | 10 | Trench es | Place and remove dust abatement fabric on each trench | | 0.00 | 500.00 | 5,000.00 | 0.00 | | 0.00 |
| 10. | 10,500 | Tons | Load, haul the lime kiln dust to storage pits and place kiln dust in pits | | 0.00 | 24.80 | 260,400.00 | 0.00 | | 0.00 |
| 11. | 8,400 | tons | Load, haul lime kiln dust to storage pits and place kiln dust in pits | | 0.00 | 24.80 | 208,320.00 | 0.00 | | 0.00 |
| 12. | 2,530 | Feet | Farm Fence Type F-4M | | 0.00 | 1.40 | 3,542.00 | 0.00 | | 0.00 |
| 13. | 3 | Ea | Farm Fence Single Panel | | 0.00 | 100.00 | 400.00 | 0.00 | | 0.00 |
| 14. | 3 | Ea | Farm Fence Double Panel | | 0.00 | 150.00 | 450.00 | 0.00 | | 0.00 |
| 15. | 16 | Foot | Farm Fence Gate, Type F-4 | | 0.00 | 5.00 | 80.00 | 0.00 | | 0.00 |
| | | | | | | | 622,902.00 | 0.00 | | 0.00 |

2.1 PROPOSAL (cont.)

| Item No. | Estimated Quantity | Unit | Description | Unit Price | Total Price |
|----------|--------------------|----------|--|---------------|----------------------|
| 1. | 1 | LUMP SUM | MOBILIZATION | <u>XXXX</u> | \$ <u>35,000.00</u> |
| 2. | 11.5 | KGAL | PROVIDE WATER | <u>50.00</u> | \$ <u>575.00</u> |
| 3. | 1 | LUMP SUM | MODIFY ACCESS ROAD TO ALLOW HAULING OF KILN DUST TO THE STORAGE TRENCHES | <u>XXXX</u> | \$ <u>640.00</u> |
| 4. | 4100 | CY | SALVAGE AND STOCKPILE COVERSOIL FROM THE FALL 1994 KILN DUST STORAGE TRENCHES | <u>2.00</u> | \$ <u>8,200.00</u> |
| 5. | 3620 | CY | SALVAGE AND STOCKPILE COVERSOIL FROM THE SPRING 1995 KILN DUST STORAGE TRENCHES | <u>2.00</u> | \$ <u>7,240.00</u> |
| 6. | 8700 | CY | EXCAVATE KILN DUST STORAGE TRENCHES AND BUILD EMBANKMENTS (FALL: 3-2 TRENCH SYSTEMS) | <u>1.50</u> | \$ <u>13,050.00</u> |
| 7. | 6900 | CY | EXCAVATE KILN DUST STORAGE TRENCHES AND BUILD EMBANKMENTS (SPRING: 2-2 TRENCH SYSTEMS) | <u>1.50</u> | \$ <u>10,350.00</u> |
| 8. | 1400 | SY | PROVIDE DUST ABATEMENT FABRIC (2 ROLLS, 350' LONG X 18" WIDE, SEWN TOGETHER LENGTHWISE) | <u>0.75</u> | \$ <u>1,050.00</u> |
| 9. | 10 | TRENCHES | PLACE AND REMOVE DUST ABATEMENT FABRIC ON EACH TRENCH | <u>320.00</u> | \$ <u>3,200.00</u> |
| 10. | 10,500 | TONS | LOAD, HAUL THE LIME KILN DUST TO THE STORAGE PITS, AND PLACE THE KILN DUST IN THE STORAGE PITS (Fall 1994) | <u>20.00</u> | \$ <u>210,000.00</u> |

2.1 PROPOSAL (cont.)

| Item No. | Estimated Quantity | Unit | Description | Unit Price | Total Price |
|----------|--------------------|------|--|---------------|----------------------|
| 11. | 8,400 | TONS | LOAD, HAUL THE LIME KILN DUST TO THE STORAGE PITS, AND PLACE THE KILN DUST IN THE STORAGE PITS (Spring 1995) | <u>20.00</u> | \$ <u>168,000.00</u> |
| 12. | 2,530 | FEET | FARM FENCE TYPE F-4M | <u>1.10</u> | \$ <u>2,531.10</u> |
| 13. | 4 | EACH | FARM FENCE SINGLE PANEL | <u>90.00</u> | \$ <u>360.00</u> |
| 14. | 3 | EACH | FARM FENCE DOUBLE PANEL | <u>130.00</u> | \$ <u>390.00</u> |
| 15. | 16 | FOOT | FARM FENCE GATE, TYPE F-4 | <u>10.00</u> | \$ <u>160.00</u> |

TOTAL: \$ 460,746.10

Four Hundred Sixty Thousand, Seven Hundred Fourty Six Dollars and Ten Cents
(Price in Words)

ATTACHMENT 2

CHANGE ORDERS

CHANGE ORDER

ORDER NO. 1

PROJECT TITLE: Hughes F Maintenance Project

MONT A/E or DSL-AMRB: 94-M03

CONTRACT DATE: November 4, 1994

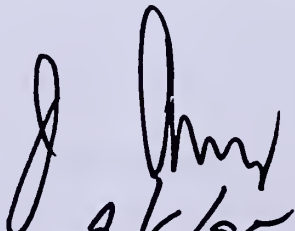
OWNER: Department of State Lands, Abandoned Mine Reclamation Bureau

CONTRACTOR: Century Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

| ITEM NO. | DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS | COST OF CHANGES | | | | | TOTAL COST |
|--|---|-----------------|-------|--------|-------|-----------------|------------|
| | | MAT'L.S. | LABOR | EQUIP. | MISC. | TOTAL UNIT COST | |
| none | Moving Fall 1994 Load, Haul the Lime Kiln Dust to the Storage Pits, and Place the Lime Kiln Dust in the Storage pits to Spring 1995 Construction Period | | | | | 0 | 0 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC. | | | | | | | 0 |
| OVERHEAD & PROFIT @ ____ % | | | | | | | INC. |
| GRAND TOTAL - THIS CHANGE ORDER | | | | | | | \$0.00 |

| | |
|--|---------------|
| Original Contract Price | \$ 377,821.00 |
| Current Contract Price Adjusted by Previous Change Order | \$ 377,821.00 |
| Cost this Change Order (+ or -) | + \$ 0.00 |
| New Contract Price including this Change Order | \$ 377,821.00 |


 2/6/95

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 4 calendar days.

4 days granted for weather days (December 25th and 26th, 1994 and January 1st and 2nd, 1995)

The date for completion of all work will be 5/31/1995 regardless of winter shut-down days.

Description of Change:

The Fall 1994 construction period requirement that Century Construction load the 10,500 tons of lime kiln dust, haul the lime kiln dust to the storage pits, and place the kiln dust in the storage pits has been changed. The Fall 1994 lime kiln dust (10,500 tons) and the Spring 1995 (8,400 tons) of lime kiln dust will be allowed to be loaded, hauled, and placed in the storage trenches during the 60 day Spring of 1995 construction period.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$ -0- (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$ -0- (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

Beth W. Eggleston

Reliance Insurance Company

By: Beth W. Eggleston

Seal

Recommended by: Century Construction

Hummel
Contractor

1-21-95
Date

Accepted by: Spectrum Engineering

Ken Jick
Engineer

11/20/95
Date

Approved by: Vir R. Andersen

per 1/18/95 B. Clisch instruction
Owner

2/6/95
Date

RECEIVED
JAN 27 9 36 AM '95
CO-2

CHANGE ORDER

ORDER NO. 2

PROJECT TITLE: Hughes F Maintenance Project

MONT A/E or DSL-AMRB: 94-M03

CONTRACT DATE: November 4, 1994

OWNER: Department of State Lands, Abandoned Mine Reclamation Bureau

CONTRACTOR: Century Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

| ITEM NO. | DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS | COST OF CHANGES | | | | | TOTAL COST |
|--|--|-----------------|-------|--------|-------|-----------------|-------------|
| | | MAT'LS | LABOR | EQUIP. | MISC. | TOTAL UNIT COST | |
| 6 | Additional work required to unload the lime kiln dust into the storage trenches (see detailed backup sheets for explanation and cost). | | | | | 6760.50 | 6,760.50 |
| 8 | Additional dust abatement fabric purchased (see detailed backup sheets for explanation and cost). | 2,730 | | | | 2730.00 | 2,730.00 |
| 10 | Additional work required to unload the lime kiln dust into the storage trenches (see detailed backup sheets for explanation and cost). | | | | | 9676.50 | 9,676.50 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC. | | | | | | | 19,167.00 |
| OVERHEAD & PROFIT @ _____ % | | | | | | | INC. |
| GRAND TOTAL - THIS CHANGE ORDER | | | | | | | \$19,167.00 |

| | |
|--|-----------------------|
| Original Contract Price | <u>\$ 377,821.00</u> |
| Current Contract Price Adjusted by Previous Change Order | <u>\$ 377,821.00</u> |
| Cost this Change Order (+ or -) | <u>+ \$ 19,167.00</u> |
| New Contract Price including this Change Order | <u>\$ 396,988.00</u> |

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 0 calendar days.

The date for completion of all work will be 5/31/1995 regardless of winter shut-down days.

Description of Change:

See the 6 pages of detailed backup and time and material slips which accompany this change order.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$ 19,167.00 (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$ 19,167.00 (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

Beth H. Eggleston

SURETY

RELIANCE INSURANCE COMPANY

By: Beth H. Eggleston

Seal

Recommended by: Century Construction

Contractor

Date

5/5/95

Accepted by: Spectrum Engineering

Engineer

Date

4/29/95

Approved by: Vic R. Anderson

Owner

Date

5-11-95

[Signature] 5/11/95

**HUGHES F MAINTENANCE PROJECT
MT DSL-AMRB: 94-M03
BACKUP INFORMATION FOR
CHANGE ORDER NUMBER 2
MAY 1, 1995**

- Item 6 Kiln Dust Storage Trenches - When the initial plan of filling the trenches failed, additional work was required to move the dirt piles between the trenches to facilitate placement of the lime into the trenches. This material was required to be double handled. The cost of moving this material is based on equipment hours times the unit bid price per hour for equipment usage. The hours are based on time cards kept on a daily basis (signed by both the contractor and the construction inspector) which are attached.

| Date | Equipment Type | Hours | Rate/ Hour | Total |
|--------------------------------|----------------|-------|------------|-------------------|
| 4/7 | Excavator | 5 | 87 | \$435 |
| | Blade | 8 | 75 | 600 |
| | Loader | 1 | 90 | 90 |
| 4/8 | Excavator | 4 | 87 | 348 |
| | Blade | 9 | 75 | 675 |
| 4/12 | Excavator | 2.5 | 87 | 217.50 |
| 4/13 | Excavator | 9.5 | 87 | 826.50 |
| 4/17 | Excavator | 7.5 | 87 | 652.50 |
| 4/18 | Excavator | 5 | 87 | 435 |
| | Loader | 2 | 90 | 180 |
| 4/19 | Excavator | 2.5 | 87 | 217.50 |
| | Blade | 1 | 75 | 75 |
| | Loader | 4 | 90 | 360 |
| 4/20 | Excavator | 5.5 | 87 | 478.50 |
| | Blade | 1 | 75 | 75 |
| | Loader | 2.5 | 90 | 225 |
| 4/21 | Excavator | 3 | 87 | 261 |
| 4/22 | Excavator | 7 | 87 | 609 |
| Total From 4/7 through 4/30/95 | | | | \$6,760.50 |

- Item 8 Provide Dust Abatement Fabric - Enough fabric was purchased to cover 4 trenches. The first 1,400 SY will be paid at the contract bid price of \$1.50/Sq. Yd. The remaining 4,200 sq. yds. (5,600-1,400 bid) will be paid at the actual contractor purchase price paid per square yard (per invoice from Roscoe Steel) or \$0.65/sq. yd. for a total of \$2,730 (4200 x 0.65).

**HUGHES F MAINTENANCE PROJECT
MT DSL-AMRB: 94-M03**

CHANGE ORDER NUMBER 2 BACKUP

- Item 10 Placement of Kiln Dust - The original plan anticipated the kiln dust to flow to the end of the trenches (per Continental Lime). This did not happen and an alternate unloading plan had to be developed. Transystems (lime kiln dust hauler) had trucks which had to be rerouted to Great Falls and shift work which was missed to the change of unloading plans. Their out-of-pocket expenses were **\$2,859** (per attached invoice).

This alternate plan requires additional Century equipment and personnel to accomplish than the original grate plan. The current system requires a blade (\$75/hour with operator), a loader (\$90/hour with operator and an additional laborer (\$30/hour with full payroll loading) for a total cost of \$195 per hour for unloading. The unloading times (1st truck arrives until last truck leaves) for the daytime shift have been as follows:

| Date | Hours | Morning (m) No. of Trucks | Evening (e) Trucks |
|------|----------|--|-----------------------|
| 3/31 | | 1 | |
| 4/6 | | 10 | 2 |
| 4/8 | | 9 | |
| 4/13 | | 10 | 4 |
| 4/18 | 3.50 (m) | 8 | 10 |
| 4/19 | 3.50 (m) | 11 | 11 |
| 4/20 | 1.75 (m) | 12 | 11 |
| 4/21 | 2.50 (m) | 12 | 11 |
| 4/22 | 2.50 (m) | 11 | 12 |
| 4/24 | 3.50 (m) | 11 | |
| 4/27 | 2.08 (m) | 12 | |
| 4/28 | 3.17 (m) | 10 | |
| 4/28 | 2.52 (e) | | 10 |
| | 25.02 | 97 trucks timed out of 188 total unloaded to date | |

This equates to 0.258 hours/truck (25.02 hours/97 truck loads). Assuming all trucks have an equal time then a total of 48.50 hours (188 trucks to date x 0.258 hours/truck) has been spent unloading these trucks. This cost is **\$9,457.50** (\$195/hour x 48.50 hours).

HUGHES F MAINTENANCE PROJECT
MT DSL-AMRB: 94-M03

CHANGE ORDER NUMBER 2 BACKUP

Item 10
(cont.)

The new plan also requires an excavator to redistribute the kiln dust within the pit for placement purposes. This time is taking 2 hours per pit. the time to date is 2 hours/pit x 5 pits to date x \$87/hour for a total of **\$870**.

The original plan required an excavator (\$87/hour with operator and 1 laborer (\$30/hour) for a total of \$117/hour to move the grates three times per pit at an estimated time of 2 crew hours per move. The credit against the new costs comes to 2 hours/pit x 3 times/pit x 5 pits to date x \$117/crew hour for a total of **\$3,510 credit**.

The total net change to Item 10 is as follows:

| | |
|--------------------------------|-------------------|
| Transystems | \$2,859.00 |
| Additional Crew Time | 9,457.50 |
| Added Excavator Time | 870.00 |
| Credit Old Time Estimate | (3,510.00) |
| Total Item 10 (to date) | \$9,676.50 |



ROSCOE STEEL & CULVERT COMPANY

A MONTANA CORPORATION ID #81-0244976
2847 HESPER RD. • BILLINGS, MT 59102-6735
PHONE (406) 656-2253 • FAX (406) 656-8576

INVOICE

NUMBER
50368

DATE
3/08/95

PAGE

TERMS
NET 30

| JOB NO. | ORDER DATE | ORDER DUE DATE | CUSTOMER NO. | P.O. NUMBER | SLSMN. | SHIPPING FOB | SHIP VIA | TERMS |
|---------|------------|----------------|--------------|-------------|--------|--------------|----------|--------|
| B 45767 | 12/20/94 | 1/15/95 | 322500 | | CB | JOBSITE | L.T.L. | NET 30 |

SOLD TO
CENTURY CONSTRUCTION
P O BOX 579
LEWISTOWN MT 59457

4162-614

SHIP TO
CENTURY CONSTRUCTION
PROJ: DSL-AMRB 94-M03
HUGHES MAINTENANCE PROJ.
JUDITH BASIN COUNTY

| QUANTITY | LENGTH | ITEM DESCRIPTION | TOT. LENGTH | UNIT PRICE | TOTAL PRICE |
|---|--------|--|-------------|------------|-------------|
| 8 | | 2002 WOVEN 18" - 0" X 350" = 700 SQ. YDS. SEWN INTO 4 ROLLS TO MAKE 36' X 350' DUST ABATEMENT FABRIC | | 455.00 | 3,640.00 |
| <p>5,600 sq yards total</p> <p>\$ $\frac{3640}{5600}$ = \$0.65/sq yard</p> <p>COPY</p> | | | | | |

REMARKS

TOTAL
WEIGHT

1760

TOTAL
DUE

3,640.00

CUSTOMER

PAST DUE ACCOUNTS BEAR A SERVICE CHARGE AT 18% ANNUALLY

Post-It® Fax Note 7671

| | | | | | |
|----------|--------------|---------|--------------|------------|---|
| To | Bill Maehl | Date | 4/28 | # of pages | 2 |
| Co./Dept | Spectra | From | Tom Evans | | |
| Phone # | | Co. | Century | | |
| Fax # | 406 259-1456 | Phone # | 406 538-2334 | | |
| | | Fax # | | | |

NAME Spectrum DATE 4/17

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|----------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| | | 4162-650 | BLADE 10-13 | |
| 5 | | 4162-650 | Rent Hoe | |
| 1 | | 4162-650 | Loader 1031 | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY [Signature]

NAME Spectrum DATE 4/17

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|---------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 7 1/2 | | | Rent Hoe | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY _____

NAME Spectrum DATE 4/18

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|----------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 9 | | 4162-650 | BLADE 10-13 | |
| 4 | | 4162-65 | Rent Hoe | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY [Signature]

NAME Spectrum DATE 4/18

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|--------------|---------|---------|------------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 5 | | | Rent Hoe | |
| 2 | | | Loader | |
| 1 | | | Blade | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY _____

NAME Spectrum DATE 4-12-98

EQUIPMENT RATE Change Order STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|---------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 2 1/2 | | | Rent Hoe | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY [Signature]

NAME Spectrum DATE 4/19

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|---------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 2 1/2 | | | Rent Hoe | |
| 1 1/2 | | | Blade | |
| 4 | | | Loader | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY [Signature]

NAME Spectrum DATE 4/13/95

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|----------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 9 1/2 | | 6142-250 | Rent Hoe | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY [Signature]

NAME Spectrum DATE 4/20

EQUIPMENT RATE _____ STANDBY RATE _____

| HOURS | | JOB NO. | MATERIAL HAULED | |
|---------|---------|---------|-----------------|--------|
| WORKING | STANDBY | | DESCRIPTION | AMOUNT |
| 5 1/2 | | | Rent hoe | |
| 2 1/2 | | | Loader | |
| 1 | | | Blade | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| TOTALS | | | | |

OPERATOR SIGNATURE [Signature]
APPROVED BY _____

D.

| | |
|---|---|
| 4 | 2 |
|---|---|

STANDBY RATE

OPERATOR SIGNATURE

APPROVED BY

DATE _____

STANDBY RATE

OPERATOR SIGNATURE

APPROVED BY

CHANGE ORDER

ORDER NO. 3 - Final

PROJECT TITLE: Hughes F Maintenance Project

MONT A/E or DSL-AMRB: 94-M03

CONTRACT DATE: November 4, 1994

OWNER: Department of State Lands, Abandoned Mine Reclamation Bureau

CONTRACTOR: Century Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

| ITEM NO. | DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS | COST OF CHANGES | | | | | TOTAL COST |
|--|---|-----------------|-------|--------|-------|-----------------|---------------|
| | | MAT'LS | LABOR | EQUIP. | MISC. | TOTAL UNIT COST | |
| 2 | Additional water was required to crust the top of the pits. An extra 3,000 gallons of water was used at a cost of \$300 (3Kgal x \$100/Kgal). | | | | | 300.00 | 300.00 |
| 6 | Less dirt was moved to excavate the trenches at a cost of -\$490 (175 yards less x \$2.80/yd) | | | | | (490.00) | (490.00) |
| 7 | Less dirt was moved to excavate the trenches at a cost of -\$490 (175 yards less x \$2.80/yd) | | | | | (490.00) | (490.00) |
| 6 | 8 trenches did not require dust abatement fabric at a cost of -\$6,400 (8 trenches x \$800/trench) | | | | | (6,400) | (6,400) |
| 10 | No fall hauling at a cost decrease of \$147000 (10500 tons x \$14/ton). | | | | | (147000.00) | (147,000.00) |
| 11 | Additional spring hauling at a cost of \$119,986.86 (8570.49 tons x \$14/ton). | | | | | 119,986.86 | 119,986.86 |
| 12 | No farm fence used. | | | | | (3,795.00) | (3,795.00) |
| 13 | No farm fence single panels. | | | | | (320.00) | (320.00) |
| 14 | No farm fence double panels. | | | | | (360.00) | (360.00) |
| 15 | No farm fence gates. | | | | | (96.00) | (96.00) |
| | Change Order Number 3 (see backup for cost detail). | | | | | 5,589.55 | 5,589.55 |
| TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC. | | | | | | | (33,074.59) |
| OVERHEAD & PROFIT @ _____ % | | | | | | | INC. |
| GRAND TOTAL - THIS CHANGE ORDER | | | | | | | \$(33,074.59) |

| | |
|--|-----------------------|
| Original Contract Price | <u>\$ 377,821.00</u> |
| Current Contract Price Adjusted by Previous Change Order | <u>\$ 396,988.00</u> |
| Cost this Change Order (+ or -) | <u>- \$ 33,074.59</u> |
| New Contract Price including this Change Order | <u>\$ 363,913.41</u> |

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decreased) by 0 calendar days.



The date for completion of all work was 5/30/1995.

Description of Change:

This change order makes the final quantity adjustments for Provide Water; Load, Haul Kiln Dust and Place in Pits; Farm Fence; Farm Fence Single Panels; Farm Fence Double Panels; and Farm Fence Gates. In addition there is equipment time for unloading and the purchase of the culvert in the access road. The additional expense of \$5,589.55 (culvert plus lime placement time) is detailed on the accompanying sheets.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$_____ (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$_____ (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

By: _____
Seal

Recommended by: Century Construction
Contractor Date

Accepted by: Spectrum Engineering
Engineer Date

Approved by: _____
Owner Date

HUGHES F MAINTENANCE PROJECT
MT DSL-AMRB: 94-M03
BACKUP INFORMATION FOR CHANGE ORDER NUMBER 3
JUNE 23, 1995

Item 11 Placement of Kiln Dust - The original plan anticipated the kiln dust to flow to the end of the trenches (per Continental Lime). This did not happen and an alternate unloading plan had to be developed. This alternate plan required additional Century equipment time. The system in May required a blade (\$75/hour with operator) and a loader (\$90/hour with operator). The unloading times (1st truck arrives until last truck leaves) for the May hauling is recorded below as well as the additional equipment hours:

| Date | Hours | No. of Loads | Morning (AM)/ Evening (PM) | Loader | Blade |
|------|-------|--------------|-------------------------------|--------|-------|
| 5/1 | 1.75 | 7 | PM | | 3.00 |
| 5/2 | 1.33 | 6 | PM | | 1.50 |
| 5/3 | 1.12 | 5 | AM | 0.42 | 1.00 |
| 5/3 | 1.75 | 6 | PM | | 2.00 |
| 5/4 | 1.73 | 7 | AM | | 1.75 |
| 5/4 | 1.67 | 6 | PM | | 1.67 |
| 5/5 | 1.42 | 7 | AM | | 2.00 |
| 5/5 | 1.50 | 6 | PM | 2.50 | |
| 5/6 | 1.50 | 6 | PM | 0.50 | 1.17 |
| 5/9 | 1.43 | 5 | AM | 1.43 | 1.43 |
| 5/9 | 2.33 | 5 | PM | | 2.33 |
| 5/10 | 1.67 | 7 | AM | | 1.67 |
| 5/10 | 2.00 | 6 | PM | | 2.00 |
| 5/11 | 1.83 | 7 | AM | 1.00 | 1.83 |
| 5/11 | 2.17 | 6 | PM | | 2.00 |
| 5/14 | 1.33 | 7 | PM | 1.33 | 1.33 |
| 5/15 | 1.00 | 7 | AM | 1.00 | 1.00 |
| 5/15 | 1.50 | 6 | PM | 3.00 | 3.00 |
| 5/16 | 1.00 | 7 | AM | 1.00 | 1.00 |
| 5/16 | 2.33 | 6 | PM | 2.17 | 2.17 |
| 5/17 | 1.50 | 6 | AM | 1.50 | 1.50 |
| 5/17 | 2.00 | 7 | PM | 2.00 | 2.00 |
| 5/18 | 2.00 | 7 | AM | 2.00 | 2.00 |
| 5/18 | 2.00 | 7 | PM | 2.00 | 2.00 |
| 5/19 | 1.50 | 7 | AM | 1.50 | 1.50 |
| 5/19 | 1.67 | 5 | PM | 2.67 | 2.67 |
| 5/20 | 1.25 | 5 | AM | 1.25 | 1.25 |
| 5/20 | 2.00 | 5 | PM | 2.00 | 2.00 |
| 5/22 | 1.75 | 5 | PM | 1.75 | 1.75 |
| 5/23 | 1.75 | 7 | AM | 1.75 | 1.75 |
| 5/23 | 2.50 | 6 | PM | 0.50 | 3.00 |
| 5/24 | 1.17 | 7 | AM | | 1.25 |
| 5/24 | 2.00 | 6 | PM | | 5.00 |
| 5/25 | 1.50 | 7 | AM | | 1.50 |
| 5/25 | 1.25 | 6 | PM | | 2.25 |
| MAY | | | | 33.27 | 65.27 |

This cost is **\$7,889.55** (\$90/loader hour x 33.27 hrs plus \$75/blade hour x 65.27 hrs).

**HUGHES F MAINTENANCE PROJECT
MT DSL-AMRB: 94-M03**

CHANGE ORDER NUMBER 3 BACKUP

Item 11 (cont.) The new plan also requires an excavator to redistribute the kiln dust within the pit for placement purposes. The May time required was 13 hours based on the attached invoice for **\$910**.

The original plan required an excavator (\$87/hour with operator and 1 laborer (\$30/hour) for a total of \$117/hour to move the grates three times per pit at an estimated time of 2 crew hours per move. The credit against the new costs comes to 2 hours/pit x 3 times/pit x 5 pits in May x \$117/crew hour for a total of **\$3,510 credit**.

The total net change to Item 11 is as follows:

| | |
|--------------------------------|-------------------|
| Additional Crew Time | 7,889.55 |
| Added Excavator Time | 910.00 |
| Credit Old Time Estimate | (3,510.00) |
| Total Item 10 (for May) | \$5,289.55 |

New Item Century Construction was requested to leave the 18-inch diameter, 24-foot long culvert in the access road. This culvert was purchased for **\$300.00**

STATEMENT

FROM: YOUNDERIAN CONST. INC.
P.O. BOX 400
STANFORD, MT 59479

NUMBER: 5046
DATE: 5/20/95

Fed ID 810406 546
Telephone 566-2757 OR 2666
Fax 566-2967

TO: CENTURY CONSTRUCTION
PO BOX 739
LEWISTOWN, MT 59457

| QUANTITY | DESCRIPTION | UNIT PRICE | UNIT TOTAL |
|----------|---|------------|------------|
| | LEIGH PROJECT JOHN SWAN CENTURY'S CONTACT PERSON | | |
| 13 | HRS EXCAVATOR: MOVE LIME IN PITS. | 70.00 | 910.00 |
| | 4162.615 T | | |
| | | TOTAL | \$910.00 |

PAYMENT DUE ON THE 10TH OF MONTH FOLLOWING INVOICE DATE
INTEREST CHARGE OF 1 1/2 PERCENT PER MONTH ON PAST DUE ACCOUNTS

THANK YOU

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| 9323 | 73040 | 111,460 | 73,040 | 36.52 |
| 9327 | 45422 | 123,640 | 85,040 | 42.52 |
| 9317 | 45423 | 123,640 | 84,980 | 42.49 |
| 9333 | 45424 | 120,940 | 81,380 | 40.69 |
| 9319 | 45425 | 121,560 | 82,960 | 41.48 |
| 9321 | 45426 | 122,000 | 83,200 | 41.60 |
| 9325 | 45427 | 122,320 | 83,660 | 41.83 |
| 9331 | 45428 | 123,120 | 84,260 | 42.13 |
| 9341 | 45429 | 123,280 | 84,280 | 42.14 |
| 9329 | 45430 | 123,840 | 84,240 | 42.12 |
| 9329 | 45431 | 121,380 | 84,780 | 42.39 |
| 9317 | 45432 | 121,940 | 83,280 | 41.64 |
| 9339 | 45433 | 125,820 | 86,000 | 43.00 |
| 9329 | 45434 | 123,180 | 83,580 | 41.79 |
| 9333 | 45435 | 122,940 | 83,380 | 41.69 |
| 9331 | 45436 | 122,220 | 83,360 | 41.68 |
| 9327 | 45437 | 123,060 | 84,460 | 42.23 |
| 9321 | 45438 | 123,640 | 84,840 | 42.42 |
| 9325 | 45439 | 122,520 | 83,860 | 41.93 |
| 9317 | 45440 | 122,440 | 83,780 | 41.89 |
| 9319 | 45441 | 122,400 | 83,800 | 41.90 |
| 9341 | 45442 | 124,800 | 85,800 | 42.90 |
| 9317 | 45443 | 121,600 | 82,940 | 41.47 |
| 9327 | 45444 | 124,200 | 85,600 | 42.80 |
| 9331 | 45445 | 120,900 | 82,040 | 41.02 |
| 9319 | 45446 | 121,380 | 82,780 | 41.39 |
| 9321 | 45447 | 122,320 | 83,520 | 41.76 |
| 9323 | 45448 | 122,300 | 83,520 | 41.76 |
| 9329 | 45449 | 121,300 | 81,700 | 40.85 |
| 9337 | 45450 | 123,040 | 85,100 | 42.55 |
| 9339 | 45451 | 122,700 | 82,880 | 41.44 |
| 9325 | 45452 | 122,560 | 83,900 | 41.95 |
| 9341 | 45453 | 123,840 | 84,840 | 42.42 |
| 9317 | 45454 | 122,620 | 83,960 | 41.98 |
| 9327 | 45455 | 124,940 | 86,340 | 43.17 |
| 9319 | 45456 | 125,820 | 87,220 | 43.61 |
| 9333 | 45457 | 123,800 | 84,240 | 42.12 |
| 9323 | 45458 | 122,120 | 83,340 | 41.67 |
| 9329 | 45459 | 122,840 | 83,240 | 41.62 |
| 9319 | 45460 | 122,040 | 83,440 | 41.72 |
| 9321 | 45461 | 122,180 | 83,380 | 41.69 |
| 9339 | 45462 | 124,040 | 84,220 | 42.11 |
| 9325 | 45463 | 123,140 | 84,480 | 42.24 |
| 9337 | 45464 | 123,000 | 85,060 | 42.53 |
| 9327 | 45465 | 123,060 | 84,460 | 42.23 |
| 9333 | 45466 | 121,940 | 82,380 | 41.19 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| | | | | |
| 9331 | 45467 | 121,960 | 83,100 | 41.55 |
| 9321 | 45468 | 122,300 | 83,500 | 41.75 |
| 9341 | 45469 | 121,860 | 82,860 | 41.43 |
| 9317 | 45470 | 122,780 | 84,120 | 42.06 |
| 9339 | 45471 | 123,720 | 83,900 | 41.95 |
| 9325 | 45510 | 124,340 | 85,680 | 42.84 |
| 9329 | 45511 | 121,700 | 82,100 | 41.05 |
| 9319 | 45512 | 123,760 | 85,160 | 42.58 |
| 9323 | 45513 | 122,180 | 83,400 | 41.70 |
| 9327 | 45514 | 122,880 | 84,280 | 42.14 |
| 9335 | 45515 | 123,220 | 84,460 | 42.23 |
| 9321 | 45516 | 122,900 | 84,100 | 42.05 |
| 9317 | 45517 | 123,820 | 85,160 | 42.58 |
| 9333 | 45518 | 121,960 | 82,400 | 41.20 |
| 9331 | 45519 | 124,440 | 85,580 | 42.79 |
| 9317 | 45520 | 124,680 | 86,020 | 43.01 |
| 9341 | 45521 | 122,460 | 83,460 | 41.73 |
| 9339 | 45522 | 122,380 | 82,560 | 41.28 |
| 9325 | 45523 | 124,640 | 85,980 | 42.99 |
| 9323 | 45524 | 122,300 | 83,520 | 41.76 |
| 9327 | 45525 | 123,340 | 84,740 | 42.37 |
| 9321 | 45526 | 123,120 | 84,320 | 42.16 |
| 9333 | 45527 | 125,420 | 85,860 | 42.93 |
| 9331 | 45528 | 122,620 | 83,760 | 41.88 |
| 9333 | 45529 | 122,020 | 82,460 | 41.23 |
| 9317 | 45530 | 122,040 | 83,380 | 41.69 |
| 9323 | 45531 | 121,600 | 82,820 | 41.41 |
| 9341 | 45532 | 124,500 | 85,500 | 42.75 |
| 9339 | 45533 | 124,380 | 84,460 | 42.23 |
| 9319 | 45534 | 124,860 | 86,260 | 43.13 |
| 9329 | 45535 | 122,260 | 82,660 | 41.33 |
| 9325 | 45536 | 124,460 | 85,800 | 42.90 |
| 9337 | 45537 | 123,080 | 85,140 | 42.57 |
| 9327 | 45538 | 125,080 | 86,480 | 43.24 |
| 9317 | 45539 | 124,660 | 86,000 | 43.00 |
| 9339 | 45540 | 124,300 | 84,480 | 42.24 |
| 9329 | 45677 | 121,280 | 81,680 | 40.84 |
| 9329 | 45678 | 122,980 | 83,380 | 41.69 |
| 9321 | 45679 | 122,440 | 83,640 | 41.82 |
| 9333 | 45680 | 122,840 | 83,280 | 41.64 |
| 9323 | 45681 | 123,600 | 84,820 | 42.41 |
| 9331 | 45682 | 122,480 | 83,620 | 41.81 |
| 9341 | 45683 | 123,440 | 84,440 | 42.22 |
| 9319 | 45684 | 122,660 | 84,060 | 42.03 |
| 9329 | 45685 | 122,860 | 83,260 | 41.63 |
| 9339 | 45686 | 124,900 | 85,080 | 42.54 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| 9317 | 45687 | 123,100 | 84,440 | 42.22 |
| 9325 | 45688 | 124,120 | 85,460 | 42.73 |
| 9335 | 45689 | 125,240 | 86,480 | 43.24 |
| 9323 | 45690 | 125,640 | 86,860 | 43.43 |
| 9331 | 45691 | 122,800 | 83,940 | 41.97 |
| 9327 | 45692 | 123,520 | 84,920 | 42.46 |
| 9319 | 45693 | 123,000 | 84,400 | 42.20 |
| 9333 | 45694 | 124,140 | 84,580 | 42.29 |
| 9325 | 45695 | 124,720 | 86,060 | 43.03 |
| 9329 | 45696 | 123,820 | 84,220 | 42.11 |
| 9339 | 45697 | 123,240 | 83,420 | 41.71 |
| 9341 | 45698 | 122,200 | 83,200 | 41.60 |
| 9341 | 45699 | 122,860 | 84,200 | 42.10 |
| 9323 | 45700 | 124,240 | 85,460 | 42.73 |
| 9337 | 45701 | 122,420 | 84,480 | 42.24 |
| 9335 | 45702 | 123,840 | 85,080 | 42.54 |
| 9327 | 45703 | 124,680 | 86,080 | 43.04 |
| 9333 | 45704 | 123,060 | 83,500 | 41.75 |
| 9319 | 45705 | 124,120 | 85,520 | 42.76 |
| 9339 | 45706 | 124,520 | 84,700 | 42.35 |
| 9331 | 45707 | 124,720 | 85,860 | 42.93 |
| 9327 | 45708 | 122,840 | 84,240 | 42.12 |
| 9321 | 45709 | 123,220 | 84,420 | 42.21 |
| 9333 | 45710 | 124,180 | 84,620 | 42.31 |
| 9339 | 45711 | 124,340 | 84,520 | 42.26 |
| 9341 | 45712 | 122,120 | 83,120 | 41.56 |
| 9317 | 45713 | 122,820 | 84,160 | 42.08 |
| 9325 | 45714 | 122,900 | 84,240 | 42.12 |
| 9319 | 45715 | 123,800 | 85,200 | 42.60 |
| 9321 | 45716 | 124,180 | 85,380 | 42.69 |
| 9329 | 45717 | 124,420 | 84,820 | 42.41 |
| 9331 | 45718 | 123,660 | 84,800 | 42.40 |
| 9327 | 45719 | 122,200 | 83,600 | 41.80 |
| 9337 | 45720 | 124,440 | 86,500 | 43.25 |
| 9323 | 45721 | 123,100 | 84,320 | 42.16 |
| 9321 | 45722 | 122,860 | 84,060 | 42.03 |
| 9341 | 45723 | 123,220 | 84,220 | 42.11 |
| 9331 | 45724 | 123,280 | 84,420 | 42.21 |
| 9319 | 45725 | 123,300 | 84,700 | 42.35 |
| 9327 | 45726 | 123,280 | 84,680 | 42.34 |
| 9323 | 45727 | 124,400 | 85,620 | 42.81 |
| 9321 | 45728 | 122,100 | 83,300 | 41.65 |
| 9341 | 45729 | 123,500 | 84,500 | 42.25 |
| 9337 | 45730 | 121,280 | 83,340 | 41.67 |
| 9339 | 45731 | 122,460 | 82,640 | 41.32 |
| 9317 | 45732 | 121,960 | 83,300 | 41.65 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| | | | | |
| 9333 | 45733 | 122,820 | 83,260 | 41.63 |
| 9331 | 45734 | 123,180 | 84,320 | 42.16 |
| 9335 | 45735 | 122,720 | 83,960 | 41.98 |
| 9319 | 45736 | 123,580 | 84,980 | 42.49 |
| 9325 | 45737 | 122,300 | 83,640 | 41.82 |
| 9323 | 45738 | 125,180 | 86,400 | 43.20 |
| 9317 | 45739 | 122,200 | 82,260 | 41.13 |
| 9327 | 45740 | 122,460 | 83,860 | 41.93 |
| 9321 | 45741 | 123,100 | 84,300 | 42.15 |
| 9317 | 45742 | 124,260 | 85,600 | 42.80 |
| 9333 | 45743 | 123,680 | 84,120 | 42.06 |
| 9341 | 45744 | 123,000 | 84,000 | 42.00 |
| 9337 | 45745 | 123,040 | 85,100 | 42.55 |
| 9325 | 45746 | 124,340 | 85,680 | 42.84 |
| 9335 | 45747 | 124,160 | 85,400 | 42.70 |
| 9325 | 45748 | 123,700 | 85,040 | 42.52 |
| 9329 | 45749 | 123,740 | 84,140 | 42.07 |
| 9341 | 45750 | 124,680 | 85,680 | 42.84 |
| 9331 | 45751 | 123,820 | 84,960 | 42.48 |
| 9319 | 45752 | 123,620 | 85,020 | 42.51 |
| 9327 | 45753 | 123,780 | 85,180 | 42.59 |
| 9339 | 45754 | 123,460 | 83,640 | 41.82 |
| 9323 | 45755 | 122,640 | 83,860 | 41.93 |
| 9341 | 45756 | 124,600 | 85,600 | 42.80 |
| 9333 | 45757 | 123,360 | 83,800 | 41.90 |
| 9337 | 45758 | 122,560 | 84,620 | 42.31 |
| 9317 | 45759 | 124,300 | 85,640 | 42.82 |
| 9329 | 45760 | 123,240 | 83,640 | 41.82 |
| 9339 | 45761 | 123,280 | 83,440 | 41.72 |
| 9331 | 45762 | 123,380 | 84,520 | 42.26 |
| 9325 | 45763 | 125,240 | 86,580 | 43.29 |
| 9335 | 45764 | 125,380 | 86,620 | 43.31 |
| 9337 | 45765 | 123,240 | 85,300 | 42.65 |
| 9339 | 45766 | 121,980 | 82,160 | 41.08 |
| 9329 | 45767 | 123,580 | 84,020 | 42.01 |
| 9323 | 45768 | 122,060 | 82,680 | 41.34 |
| 9331 | 45769 | 122,200 | 83,340 | 41.67 |
| 9327 | 45770 | 122,660 | 84,060 | 42.03 |
| 9321 | 45771 | 122,580 | 83,780 | 41.89 |
| 9325 | 45772 | 123,230 | 84,570 | 42.29 |
| 9319 | 45773 | 123,620 | 85,020 | 42.51 |
| 9323 | 45774 | 123,920 | 85,140 | 42.57 |
| 9321 | 45775 | 123,860 | 85,060 | 42.53 |
| 9341 | 45776 | 122,900 | 83,900 | 41.95 |
| 9317 | 45777 | 123,040 | 84,380 | 42.19 |
| 9331 | 45778 | 123,040 | 84,180 | 42.09 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| 9339 | 45779 | 123,620 | 83,800 | 41.90 |
| 9325 | 45780 | 122,300 | 83,640 | 41.82 |
| 9337 | 45781 | 122,880 | 84,940 | 42.47 |
| 9333 | 45782 | 122,240 | 82,680 | 41.34 |
| 9331 | 45783 | 121,040 | 82,120 | 41.06 |
| 9331 | 45784 | 122,980 | 84,120 | 42.06 |
| 9321 | 45785 | 121,800 | 83,200 | 41.60 |
| 9339 | 45786 | 122,580 | 82,760 | 41.38 |
| 9337 | 45787 | 122,220 | 84,280 | 42.14 |
| 9319 | 45788 | 121,180 | 82,580 | 41.29 |
| 9317 | 45789 | 121,160 | 82,500 | 41.25 |
| 9327 | 45790 | 122,260 | 83,660 | 41.83 |
| 9341 | 45791 | 122,440 | 83,440 | 41.72 |
| 9327 | 45792 | 122,400 | 83,800 | 41.90 |
| 9319 | 45793 | 121,940 | 83,340 | 41.67 |
| 9341 | 45794 | 122,340 | 83,340 | 41.67 |
| 9331 | 45795 | 121,680 | 82,820 | 41.41 |
| 9337 | 45796 | 122,540 | 84,600 | 42.30 |
| 9327 | 45797 | 123,500 | 84,900 | 42.45 |
| 9337 | 45798 | 122,480 | 84,540 | 42.27 |
| 9341 | 45799 | 123,920 | 84,920 | 42.46 |
| 9319 | 45800 | 123,620 | 85,020 | 42.51 |
| 9331 | 45801 | 122,340 | 83,480 | 41.74 |
| 9327 | 45802 | 122,960 | 84,360 | 42.18 |
| 9135 | 45803 | 122,820 | 81,990 | 41.00 |
| 9319 | 45804 | 122,700 | 84,100 | 42.05 |
| 9339 | 45805 | 122,720 | 82,900 | 41.45 |
| 9341 | 45806 | 122,360 | 83,360 | 41.68 |
| 9317 | 45807 | 124,080 | 85,420 | 42.71 |
| 9339 | 45808 | 123,840 | 84,020 | 42.01 |
| 9331 | 45809 | 123,820 | 84,960 | 42.48 |
| 9327 | 45810 | 123,340 | 84,740 | 42.37 |
| 9317 | 45811 | 123,240 | 84,580 | 42.29 |
| 9339 | 45812 | 123,600 | 83,780 | 41.89 |
| 9341 | 45813 | 123,980 | 84,980 | 42.49 |
| 9317 | 45814 | 124,140 | 85,480 | 42.74 |
| 9337 | 45815 | 124,000 | 86,060 | 43.03 |
| 9319 | 45816 | 122,060 | 83,460 | 41.73 |
| 9339 | 45817 | 124,660 | 84,840 | 42.42 |
| 9341 | 45818 | 124,540 | 85,540 | 42.77 |
| 9327 | 45819 | 123,660 | 85,060 | 42.53 |
| 9337 | 45820 | 123,720 | 85,780 | 42.89 |
| 9339 | 45821 | 120,240 | 80,420 | 40.21 |
| 9317 | 45822 | 124,020 | 85,360 | 42.68 |
| 9331 | 45823 | 122,660 | 83,800 | 41.90 |
| 9341 | 45824 | 122,600 | 83,600 | 41.80 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| | | | | |
| 9337 | 45825 | 123,580 | 85,640 | 42.82 |
| 9331 | 45826 | 123,320 | 84,460 | 42.23 |
| 9327 | 45827 | 122,160 | 83,560 | 41.78 |
| 9339 | 45828 | 122,700 | 82,880 | 41.44 |
| 9341 | 45829 | 122,960 | 83,960 | 41.98 |
| 9337 | 45830 | 122,460 | 84,520 | 42.26 |
| 9331 | 45831 | 122,320 | 83,460 | 41.73 |
| 9327 | 45832 | 121,900 | 83,300 | 41.65 |
| 9135 | 45833 | 121,400 | 80,570 | 40.29 |
| 9339 | 45834 | 122,180 | 82,360 | 41.18 |
| 9341 | 45835 | 121,740 | 82,740 | 41.37 |
| 9327 | 45836 | 121,060 | 82,460 | 41.23 |
| 9135 | 45837 | 120,420 | 80,590 | 40.30 |
| 9337 | 45838 | 122,160 | 84,220 | 42.11 |
| 9317 | 45839 | 121,460 | 82,800 | 41.40 |
| 9339 | 45840 | 122,520 | 82,700 | 41.35 |
| 9319 | 45841 | 122,060 | 83,460 | 41.73 |
| 9327 | 45842 | 122,040 | 83,440 | 41.72 |
| 9337 | 45843 | 122,560 | 84,620 | 42.31 |
| 9341 | 45844 | 121,600 | 82,600 | 41.30 |
| 9331 | 45845 | 121,960 | 83,100 | 41.55 |
| 9327 | 45846 | 122,700 | 84,100 | 42.05 |
| 9319 | 45847 | 122,980 | 84,380 | 42.19 |
| 9317 | 45848 | 121,720 | 83,060 | 41.53 |
| 9341 | 45849 | 121,940 | 82,940 | 41.47 |
| 9337 | 45850 | 122,400 | 84,460 | 42.23 |
| 9331 | 45851 | 123,260 | 84,400 | 42.20 |
| 9319 | 45852 | 122,000 | 83,400 | 41.70 |
| 9339 | 45853 | 122,980 | 83,160 | 41.58 |
| 9341 | 45854 | 77,980 | 49,980 | 24.99 |
| 9317 | 45855 | 122,160 | 83,500 | 41.75 |
| 9135 | 45856 | 77,660 | 49,660 | 24.83 |
| 9331 | 45857 | 122,580 | 83,720 | 41.86 |
| 9337 | 45858 | 123,460 | 85,520 | 42.76 |
| 9319 | 45859 | 122,920 | 84,320 | 42.16 |
| 9135 | 45860 | 76,760 | 48,760 | 24.38 |
| 9327 | 45861 | 122,520 | 83,920 | 41.96 |
| 9317 | 45862 | 123,000 | 84,340 | 42.17 |
| 9339 | 45863 | 122,200 | 82,380 | 41.19 |
| 9319 | 45864 | 122,500 | 83,900 | 41.95 |
| 9331 | 45865 | 122,960 | 84,100 | 42.05 |
| 9341 | 45866 | 123,680 | 84,680 | 42.34 |
| 9339 | 45867 | 122,560 | 82,740 | 41.37 |
| 9337 | 45868 | 123,840 | 85,900 | 42.95 |
| 9317 | 45869 | 124,020 | 85,360 | 42.68 |
| 9337 | 45870 | 122,280 | 84,340 | 42.17 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| 9319 | 45871 | 122,580 | 83,980 | 41.99 |
| 9341 | 45872 | 121,940 | 82,940 | 41.47 |
| 9317 | 45873 | 122,380 | 83,720 | 41.86 |
| 9319 | 45874 | 121,900 | 83,300 | 41.65 |
| | 45875 | 122,840 | 82,010 | 41.01 |
| 9319 | 45876 | 122,980 | 84,380 | 42.19 |
| 9327 | 45877 | 121,200 | 82,600 | 41.30 |
| 9337 | 45878 | 123,500 | 85,560 | 42.78 |
| 9339 | 45879 | 121,500 | 81,680 | 40.84 |
| 9335 | 45880 | 120,960 | 82,200 | 41.10 |
| 9317 | 45881 | 122,640 | 83,980 | 41.99 |
| 9341 | 45882 | 120,360 | 81,360 | 40.68 |
| 9339 | 45883 | 121,840 | 82,020 | 41.01 |
| 9331 | 45884 | 124,480 | 85,620 | 42.81 |
| 9327 | 45885 | 121,680 | 83,080 | 41.54 |
| 9337 | 45886 | 123,320 | 85,380 | 42.69 |
| 9341 | 45887 | 123,840 | 84,840 | 42.42 |
| 9317 | 45888 | 121,300 | 82,640 | 41.32 |
| 9337 | 45889 | 123,480 | 85,540 | 42.77 |
| 9319 | 45890 | 123,320 | 84,720 | 42.36 |
| 9341 | 45891 | 124,820 | 85,820 | 42.91 |
| 9339 | 45892 | 122,540 | 82,720 | 41.36 |
| 9317 | 45893 | 123,060 | 84,400 | 42.20 |
| 9327 | 45894 | 122,920 | 84,320 | 42.16 |
| 9339 | 45895 | | 84,680 | 42.34 |
| 9319 | 45896 | 123,160 | 84,560 | 42.28 |
| 9341 | 45897 | 124,360 | 85,360 | 42.68 |
| 9327 | 45898 | 121,460 | 82,860 | 41.43 |
| 9331 | 45899 | 121,520 | 82,660 | 41.33 |
| 9317 | 45900 | 122,080 | 83,420 | 41.71 |
| 9337 | 45901 | 121,980 | 84,040 | 42.02 |
| 9337 | 45902 | 122,280 | 84,340 | 42.17 |
| 9327 | 45903 | 122,600 | 84,000 | 42.00 |
| 9319 | 45904 | 123,220 | 84,620 | 42.31 |
| 9319 | 45905 | 122,360 | 83,760 | 41.88 |
| 9331 | 45906 | 122,280 | 83,420 | 41.71 |
| 9317 | 45907 | 122,700 | 84,040 | 42.02 |
| 9339 | 45908 | 122,000 | 82,180 | 41.09 |
| 9337 | 45909 | 125,000 | 87,060 | 43.53 |
| 9341 | 45910 | 127,500 | 88,500 | 44.25 |
| 9319 | 45911 | 122,500 | 83,900 | 41.95 |
| 9339 | 45912 | 122,580 | 82,760 | 41.38 |
| 9327 | 45913 | 122,420 | 83,820 | 41.91 |
| 9317 | 45914 | 122,560 | 83,900 | 41.95 |
| 9331 | 45915 | 123,520 | 84,660 | 42.33 |
| 9337 | 45916 | 122,100 | 84,160 | 42.08 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|--------|----------|----------|----------|-------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| | | | | |
| 9331 | 45917 | 122,200 | 83,340 | 41.67 |
| 9341 | 45918 | 122,540 | 83,540 | 41.77 |
| 9339 | 45919 | 121,940 | 82,120 | 41.06 |
| 9319 | 45920 | 123,340 | 84,740 | 42.37 |
| 9317 | 45921 | 123,560 | 84,900 | 42.45 |
| 9327 | 45922 | 122,160 | 83,560 | 41.78 |
| 9339 | 45923 | 123,300 | 83,480 | 41.74 |
| 9331 | 45924 | 123,140 | 84,280 | 42.14 |
| 9337 | 45925 | 121,820 | 83,880 | 41.94 |
| 9317 | 45926 | 122,120 | 83,460 | 41.73 |
| 9341 | 46392 | 123,120 | 84,120 | 42.06 |
| 9337 | 46393 | 122,180 | 84,240 | 42.12 |
| 9327 | 46394 | 122,100 | 83,500 | 41.75 |
| 9339 | 46395 | 123,080 | 83,260 | 41.63 |
| 9331 | 46396 | 122,320 | 83,460 | 41.73 |
| 9341 | 46397 | 122,020 | 83,020 | 41.51 |
| 9319 | 46398 | 122,260 | 83,660 | 41.83 |
| 9317 | 46399 | 122,360 | 83,700 | 41.85 |
| 9339 | 46400 | 123,020 | 83,200 | 41.60 |
| 9327 | 46401 | 122,520 | 83,920 | 41.96 |
| 9337 | 46402 | 122,920 | 84,980 | 42.49 |
| 9331 | 46403 | 122,880 | 84,020 | 42.01 |
| 9341 | 46404 | 122,060 | 83,060 | 41.53 |
| 9341 | 46405 | 123,620 | 84,620 | 42.31 |
| 9317 | 46406 | 123,020 | 84,360 | 42.18 |
| 9319 | 46407 | 122,100 | 83,500 | 41.75 |
| 9331 | 46408 | 122,940 | 84,080 | 42.04 |
| 9331 | 46409 | 122,320 | 83,460 | 41.73 |
| 9337 | 46410 | 122,320 | 84,380 | 42.19 |
| 9341 | 46411 | 122,740 | 83,740 | 41.87 |
| 9319 | 46412 | 124,580 | 85,980 | 42.99 |
| 9339 | 46413 | 123,040 | 83,220 | 41.61 |
| 9319 | 46414 | 124,300 | 85,700 | 42.85 |
| 9327 | 46415 | 122,340 | 83,740 | 41.87 |
| 9331 | 46416 | 121,820 | 82,960 | 41.48 |
| 9337 | 46417 | 122,180 | 84,240 | 42.12 |
| 9319 | 46418 | 122,140 | 83,540 | 41.77 |
| 9341 | 46419 | 123,640 | 84,640 | 42.32 |
| 9337 | 46420 | 122,280 | 84,340 | 42.17 |
| 9331 | 46421 | 123,600 | 84,740 | 42.37 |
| 9339 | 46422 | 122,080 | 82,260 | 41.13 |
| 9327 | 46423 | 122,040 | 83,440 | 41.72 |
| 9341 | 46424 | 123,440 | 84,440 | 42.22 |
| 9317 | 46425 | 122,740 | 84,080 | 42.04 |
| 9339 | 46426 | 123,840 | 84,020 | 42.01 |
| 9327 | 46427 | 124,540 | 85,940 | 42.97 |

CONTINENTIAL LIME

| | TOWNSEND | TOWNSEND | TOWNSEND | TONS LOADED |
|---|----------|----------|--------------|------------------|
| TRUCK | B/L | GROSS | NET | AT |
| NUMBER | NUMBER | WEIGHT | WEIGHT | TOWNSEND |
| | | | | |
| 9341 | 46428 | 122,980 | 83,980 | 41.99 |
| 9319 | 46429 | 122,720 | 84,120 | 42.06 |
| 9337 | 46430 | 122,120 | 84,180 | 42.09 |
| 9339 | 46431 | 122,500 | 82,680 | 41.34 |
| 9331 | 46432 | 122,220 | 83,360 | 41.68 |
| 9317 | 46433 | 124,020 | 85,360 | 42.68 |
| 9331 | 46434 | 122,260 | 83,400 | 41.70 |
| 9337 | 46435 | 122,380 | 84,440 | 42.22 |
| 9337 | 46436 | 122,240 | 84,300 | 42.15 |
| 9327 | 46437 | 123,020 | 84,420 | 42.21 |
| 9341 | 46438 | 122,480 | 83,480 | 41.74 |
| 9341 | 46439 | 122,700 | 83,700 | 41.85 |
| 9339 | 46440 | 122,980 | 84,220 | 42.11 |
| 9135 | 46441 | 123,040 | 82,210 | 41.11 |
| 9341 | 46442 | 122,320 | 83,320 | 41.66 |
| 9327 | 46443 | 122,260 | 83,660 | 41.83 |
| 9331 | 46444 | 122,860 | 84,000 | 42.00 |
| 9339 | 46445 | 123,160 | 83,340 | 41.67 |
| 9317 | 46446 | 123,000 | 84,340 | 42.17 |
| 9337 | 46447 | 122,820 | 84,880 | 42.44 |
| 9319 | 46448 | 123,840 | 85,240 | 42.62 |
| 9327 | 46449 | 122,280 | 83,680 | 41.84 |
| 9337 | 46450 | 122,680 | 84,740 | 42.37 |
| 9339 | 46451 | 123,060 | 83,240 | 41.62 |
| 9341 | 46452 | 122,800 | 83,800 | 41.90 |
| 9317 | 46453 | 123,060 | 84,400 | 42.20 |
| 9319 | 46454 | 122,720 | 84,120 | 42.06 |
| 9341 | 46455 | 123,660 | 84,660 | 42.33 |
| 9339 | 46456 | 123,680 | 83,860 | 41.93 |
| 9327 | 46457 | 123,660 | 85,060 | 42.53 |
| 9319 | 46458 | 122,600 | 84,000 | 42.00 |
| 9337 | 46459 | 121,860 | 83,920 | 41.96 |
| 9331 | 46460 | 122,020 | 83,160 | 41.58 |
| 9317 | 46461 | 121,500 | 82,840 | 41.42 |
| 9331 | 46462 | 122,480 | 83,620 | 41.81 |
| 9317 | 46463 | 123,480 | 84,820 | 42.41 |
| 9319 | 46464 | 123,720 | 85,120 | 42.56 |
| | | | | |
| | | | TOTAL | 16,970.46 |
| | | | | |
| *Note: State of Montana has been billed for 16,970.49 tons from | | | | |
| Continental Lime. | | | | |

ATTACHMENT 3

PAYMENT REQUESTS

PAYMENT REQUEST NO. 1

FROM 12/12/1994 TO 1/12/1995

PROJECT TITLE: HUGHES F MAINTENANCE PROJECT

LOCATION: JUDITH BASIN COUNTY MONT A/E or DSL-AMRB: 94-M03

NAME OF CONTRACTOR: CENTURY CONSTRUCTION

ADDRESS: P.O. BOX 739, LEWISTOWN, MONTANA 59457

SUMMARY OF PROJECT STATUS

Amount of Original Contract \$ 377,821.00
Change Order No. \$
Change Order No. \$
Change Order No. \$
Amount of Approved Change Order(s) \$ 0.00
TOTAL CONTRACT AMOUNT \$ 377,821.00

| Pay Request No. | Amount of Request |
|-----------------|-------------------|
| 1 | \$ 75,520.00 |
| | |
| | |
| | |
| | |

Total Contract Amount Completed to Date \$ 75,520.00
Less Retainage (10 %) \$ 7,552.00
TOTAL AMOUNT EARNED TO DATE \$ 67,968.00
Less Previous Payments \$ 0.00
AMOUNT DUE THIS PAYMENT \$ 67,968.00
Less 1% Tax \$ 679.68
TOTAL DUE CONTRACTOR \$ 67,288.32

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

CENTURY CONSTRUCTION
Contractor

By [Signature]
Date 1/16/95

RECOMMENDED BY:

SPECTRUM ENGINEERING
Engineer

By [Signature]
Date 1/13/95

APPROVED BY: 30160 222-956009-01

| | |
|---|-------|
| DEPARTMENT OF STATE LANDS, ABANDONED MINE RECLAMATION BUREAU | |
| OBJ. EXP. <u>2/21</u> | Owner |
| By <u>[Signature]</u> | |
| Date <u>1-23-95</u> | |

| Item No. | Description | Contract Quantity | Contract Unit Price | Previous Quantity Requested | Current Quantity Completed | Total Quantity Completed to Date | Total Contract Amount Completed to Date | Amount Due this Payment |
|----------|---|-------------------|---------------------|-----------------------------|----------------------------|----------------------------------|---|-------------------------|
| 1. | Mobilization | 1 LS | 40000.00 | 0 | 0.5 | 0.5 | 20,000.00 | 20,000.00 |
| 2. | Provide Water | 11.5 Kgal | 100.00 | 0 | 0 | 0 | 0.00 | 0.00 |
| 3. | Modify Access Road to Allow Hauling of Kiln Dust to Storage Trenches | 1 L.S | 6000.00 | 0 | 0.85 | 0.85 | 5,100.00 | 5,100.00 |
| 4. | Salvage and Stockpile Cover Soil from Fall 1994 Kiln Dust Storage Trenches | 4100 CY | 1.00 | 0 | 4100 | 4100 | 4,100.00 | 4,100.00 |
| 5. | Salvage and Stockpile Cover Soil From Spring 1995 Kiln Dust Storage Trenches | 3620 CY | 1.00 | 0 | 3620 | 3620 | 3,620.00 | 3,620.00 |
| 6. | Excavate Kiln Dust Storage Trenches and Build Embankments, Fall, 1994 | 8700 CY | 2.80 | 0 | 8525 | 8525 | 23,870.00 | 23,870.00 |
| 7. | Excavate Kiln Dust Storage Trenches and Build Embankments, Spring, 1995 | 6900 CY | 2.80 | 0 | 6725 | 6725 | 18,830.00 | 18,830.00 |
| 8. | Provide Dust Abatement Fabric | 1400 SY | 1.50 | 0 | 0 | 0 | 0.00 | 0.00 |
| 9. | Place and Remove Dust Abatement Fabric on Each Trench | 10 Trench | 800.00 | 0 | 0 | 0 | 0.00 | 0.00 |
| 10. | Load, Haul the Lime Kiln Dust to Storage Pits and Place Kiln Dust in Pits, Fall, 1994 | 10,500 Ton | 14.00 | 0 | 0 | 0 | 0.00 | 0.00 |
| 11 | Load, Haul the Lime Kiln Dust to Storage Pits and Place Kiln Dust in Pits, Spring, 1995 | 8,400 Ton | 14.00 | 0 | 0 | 0 | 0.00 | 0.00 |
| 12. | Farm Fence Type F-4M | 2,530 FT | 1.50 | 0 | 0 | 0 | 0.00 | 0.00 |
| 13. | Farm Fence Single Panel | 4 EA | 80.00 | 0 | 0 | 0 | 0.00 | 0.00 |
| 14. | Farm Fence Double panel | 3 EA | 120.00 | 0 | 0 | 0 | 0.00 | 0.00 |

| Item No. | Description | Contract Quantity | Contract Unit Price | Previous Quantity Requested | Current Quantity Completed | Total Quantity Completed to Date | Total Contract Amount Completed to Date | Amount Due this Payment |
|---------------|-------------------------------------|-------------------|---------------------|-----------------------------|----------------------------|----------------------------------|---|-------------------------|
| 15 | Farm Fence Gate, Type F-4 | 16 FT | 6.00 | \$ | 0 | 0 | 0.00 | 0.00 |
| | Materials on Site (Attach Schedule) | - | - | \$ | \$ | • | \$0.00 | \$0.00 |
| TOTALS | | | | | | | \$75,520.00 | \$75,520.00 |

PAYMENT REQUEST NO. 2

FROM 01/12/1995 TO 5/01/1995

PROJECT TITLE: HUGHES F MAINTENANCE PROJECT
 LOCATION: JUDITH BASIN COUNTY MONT DSL-AMRB: 94-M03
 NAME OF CONTRACTOR: CENTURY CONSTRUCTION
 ADDRESS: P.O. BOX 739, LEWISTOWN, MONTANA 59457

SUMMARY OF PROJECT STATUS

| | |
|------------------------------------|-----------------------------|
| Amount of Original Contract | \$ <u>377,821.00</u> |
| Change Order No. <u>1</u> | \$ <u>0.00</u> |
| Change Order No. <u>2</u> | \$ <u>19,167.00</u> |
| Change Order No. _____ | \$ _____ |
| Amount of Approved Change Order(s) | \$ <u>19,167.00</u> |
| TOTAL CONTRACT AMOUNT | \$ <u>396,988.00</u> |

| Pay Request No. | Amount of Request |
|-----------------|-------------------|
| 1 | \$ 67,968.00 |
| 2 | \$ 127,815.30 |
| | |
| | |

| | |
|---|-----------------------------|
| Total Contract Amount Completed to Date | \$ <u>217,537.00</u> |
| Less Retainage (<u>10</u> %) | \$ <u>21,753.70</u> |
| TOTAL AMOUNT EARNED TO DATE | \$ <u>195,783.30</u> |
| Less Previous Payments | \$ <u>67,968.00</u> |
| AMOUNT DUE THIS PAYMENT | \$ <u>127,815.30</u> |
| Less 1% Tax | \$ <u>1,278.15</u> |
| TOTAL DUE CONTRACTOR | \$ <u>126,537.15</u> |

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

CENTURY CONSTRUCTION
 Contractor
 By [Signature]
 Date 5/1/95

RECOMMENDED BY:
SPECTRUM ENGINEERING
 Engineer
 By [Signature]
 Date 4/29/95

APPROVED BY: 5/11/95

DEPARTMENT OF STATE LANDS, ABANDONED
MINE RECLAMATION BUREAU
 Owner

By _____

Date _____

| |
|--|
| RESP. CNTR. <u>30160 22-95009-01 P</u> |
| OBL. EXP. <u>2121</u> |
| APPROVAL <u>[Signature]</u> |
| DATE <u>5-11-95</u> |

| Item No. | Description | Contract Quantity | Contract Unit Price | Previous Quantity Requested | Current Quantity Completed | Total Quantity Completed to Date | Total Contract Amount Completed to Date | Amount Due this Payment |
|---------------|--|-------------------|---------------------|-----------------------------|----------------------------|----------------------------------|---|-------------------------|
| 1. | Mobilization | 1 LS | 40000.00 | 0.5 | 0.5 | 1.0 | 40,000.00 | 20,000.00 |
| 2. | Provide Water | 11.5 Kgal | 100.00 | 0 | 0.5 | 2.5 | 250.00 | 250.00 |
| 3. | Modify Access Road to Allow Hauling of Kiln Dust to Trenches | 1 LS | 6000.00 | 0.85 | 0.15 | 1.0 | 6,000.00 | 900.00 |
| 4. | Salvage/Stockpile Cover Soil-1994 Kiln Dust Trenches | 4100 CY | 1.00 | 4100 | 0 | 4,100.0 | 4,100.00 | 0.00 |
| 9. | Salvage/Stockpile Cover Soil-1995 Kiln Dust Trenches | 3620 CY | 1.00 | 3620 | 0 | 3,620.0 | 3,620.00 | 0.00 |
| 6. | Excavate Kiln Dust Trenches & Build Embankments-1994 | 8700 CY | 2.80 | 8525 | 0 | 8,525.0 | 23,870.00 | 0.00 |
| 4. | Excavate Kiln Dust Trenches & Build Embankments-1995 | 6900 CY | 2.80 | 6725 | 0 | 6,725.0 | 18,830.00 | 0.00 |
| 8. | Provide Dust Abatement Fabric | 1400 SY | 1.50 | 0 | 1400 | 1,400.0 | 2,100.00 | 2,100.00 |
| 9. | Place/Remove Dust Abatement Fabric on Each Trench | 10 Trench | 800.00 | 0 | 2 | 2.0 | 1,600.00 | 1,600.00 |
| 10. | Load, Haul Kiln Dust and Place Kiln Dust in Pits-1994 | 10500 Ton | 14.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 11 | Load, Haul Kiln Dust and Place Kiln Dust in Pits-1995 | 8400 Ton | 14.00 | 0 | 7000 | 7,000.0 | 98,000.00 | 98,000.00 |
| 12. | Farm Fence Type F-4M | 2530 FT | 1.50 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 13. | Farm Fence Single Panel | 4 EA | 80.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 14. | Farm Fence Double Panel | 3 EA | 120.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 15 | Farm Fence Gate, Type F-4 | 16 FT | 6.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| | Change Order 2 | | | | 1 | 1 | 19,167.00 | 19,167.00 |
| | Materials on Site (Attach Schedule) | -- | -- | \$ | \$ | -- | \$0.00 | \$0.00 |
| TOTALS | | | | | | | \$217,537.00 | \$142,017.00 |

PAYMENT REQUEST NO. 3 - Final

FROM 05/01/1995 TO 6/01/1995

PROJECT TITLE: HUGHES F MAINTENANCE PROJECT

LOCATION: JUDITH BASIN COUNTY MONT DSL-AMRB: 94-M03

NAME OF CONTRACTOR: CENTURY CONSTRUCTION

ADDRESS: P.O. BOX 739, LEWISTOWN, MONTANA 59457

SUMMARY OF PROJECT STATUS

Amount of Original Contract \$ 377,821.00

Change Order No. 1 \$ 0.00

Change Order No. 2 \$ 19,167.00

Change Order No. 3 \$ (33,074.59)

Amount of Approved Change Order(s) \$ (13,907.59)

TOTAL CONTRACT AMOUNT \$ 363,913.41

| Pay Request No. | Amount of Request |
|-----------------|-------------------|
| 1 | \$ 67,968.00 |
| 2 | \$ 127,815.30 |
| 3 | \$ 168,130.11 |
| | |

Total Contract Amount Completed to Date \$ 363,913.41

Less Retainage (0 %) \$ 0.00

TOTAL AMOUNT EARNED TO DATE \$ 363,913.41

Less Previous Payments \$ 195,783.30

AMOUNT DUE THIS PAYMENT \$ 168,130.11

Less 1% Tax \$ 1,681.30

TOTAL DUE CONTRACTOR \$ 166,448.81

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

CENTURY CONSTRUCTION
Contractor

By _____

Date _____

RECOMMENDED BY:

SPECTRUM ENGINEERING
Engineer

By _____

Date _____

APPROVED BY:

DEPARTMENT OF STATE LANDS, ABANDONED
MINE RECLAMATION BUREAU
Owner

By _____

Date _____

| Item No. | Description | Contract Quantity | Contract Unit Price | Previous Quantity Requested | Current Quantity Completed | Total Quantity Completed to Date | Total Contract Amount Completed to Date | Amount Due this Payment |
|---------------|--|-------------------|---------------------|-----------------------------|----------------------------|----------------------------------|---|-------------------------|
| 1. | Mobilization | 1 LS | 40000.00 | 1 | 0 | 1.0 | 40,000.00 | 0.00 |
| 2. | Provide Water | 11.5 Kgal | 100.00 | 2.5 | 12 | 14.5 | 1,450.00 | 1,200.00 |
| 3. | Modify Access Road to Allow Hauling of Kiln Dust to Trenches | 1 LS | 6000.00 | 1 | 0 | 1.0 | 6,000.00 | 0.00 |
| 4. | Salvage/Stockpile Cover Soil-1994 Kiln Dust Trenches | 4100 CY | 1.00 | 4100 | 0 | 4,100.0 | 4,100.00 | 0.00 |
| 5. | Salvage/Stockpile Cover Soil-1995 Kiln Dust Trenches | 3620 CY | 1.00 | 3620 | 0 | 3,620.0 | 3,620.00 | 0.00 |
| 6. | Excavate Kiln Dust Trenches & Build Embankments-1994 | 8700 CY | 2.80 | 8525 | 0 | 8,525.0 | 23,870.00 | 0.00 |
| 4. | Excavate Kiln Dust Trenches & Build Embankments-1995 | 6900 CY | 2.80 | 6725 | 0 | 6,725.0 | 18,830.00 | 0.00 |
| 8. | Provide Dust Abatement Fabric | 1400 SY | 1.50 | 1400 | 0 | 1,400.0 | 2,100.00 | 0.00 |
| 9. | Place/Remove Dust Abatement Fabric on Each Trench | 10 Trench | 800.00 | 2 | 0 | 2.0 | 1,600.00 | 0.00 |
| 10. | Load, Haul Kiln Dust and Place Kiln Dust in Pits-1994 | 10500 Ton | 14.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 11 | Load, Haul Kiln Dust and Place Kiln Dust in Pits-1995 | 8400 Ton | 14.00 | 7000 | 9970.49 | 16,970.5 | 237,587.00 | 139,586.86 |
| 12. | Farm Fence Type F-4M | 2530 FT | 1.50 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 13. | Farm Fence Single Panel | 4 EA | 80.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 14. | Farm Fence Double Panel | 3 EA | 120.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| 15 | Farm Fence Gate, Type F-4 | 16 FT | 6.00 | 0 | 0 | 0.0 | 0.00 | 0.00 |
| | Change Order 2 | | | 1 | 0 | 1 | 19,167.00 | 0.00 |
| | Change Order 3 | | | | 1 | 1 | 5,589.55 | 5,589.55 |
| | Materials on Site (Attach Schedule) | -- | -- | \$ | \$ | -- | \$0.00 | \$0.00 |
| TOTALS | | | | | | | \$363,913.55 | \$146,376.41 |

ATTACHMENT 4

ANALYSIS OF CONSULTANT COSTS INCURRED

ANALYSIS OF CONSULTANT COSTS INCURRED
FOR THE MONTANA DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU

AMR PROJECT NUMBER: DSL-AMRB 94-M03
HUGHES F MAINTENANCE PROJECT

DATE OF PREPARATION: JUNE 28TH, 1995

| ENGINEERING SERVICE | AMOUNT |
|--|--------------------|
| DESIGN ENGINEERING | \$14,271.35 |
| CONSTRUCTION INSPECTION & ADMINISTRATION | \$48,203.43 |
| TOTAL PROJECT ENGINEERING COST: | <u>\$62,474.78</u> |

| | |
|--------------------|---------------------|
| CONSTRUCTION COST: | <u>\$363,913.41</u> |
|--------------------|---------------------|

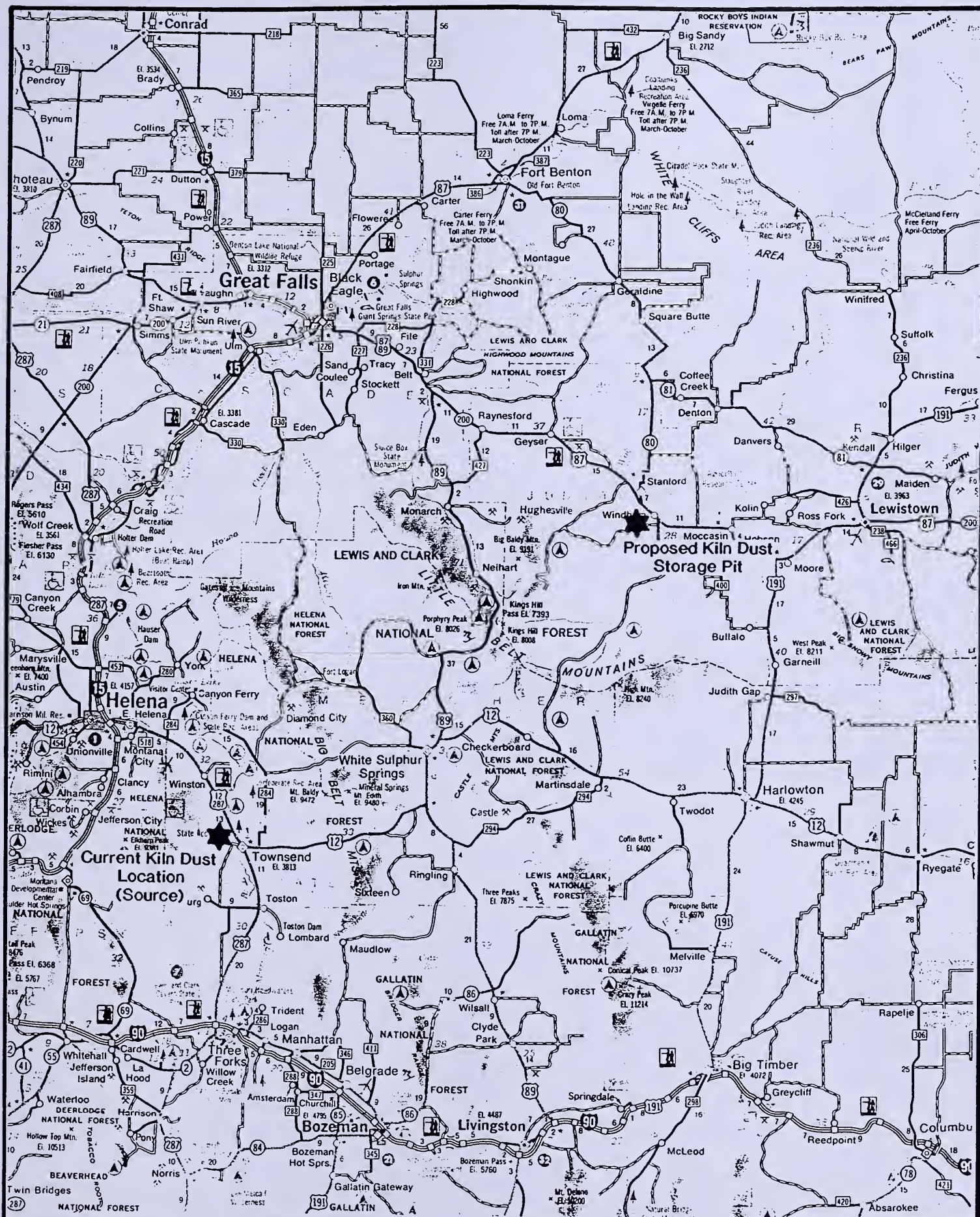
PERCENTAGE ENGINEERING FEES TO CONSTRUCTION COST:

| | |
|--|--------|
| DESIGN ENGINEERING/CONSTRUCTION COST | 3.92% |
| CONSTRUCTION ENGINEERING/CONSTRUCTION COST | 13.25% |
| TOTAL ENGINEERING COST/CONSTRUCTION COST | 17.17% |

REMARKS: Services provided by Spectrum Engineering included landowner contact, surveying, basic engineering and reclamation design, bid document preparation, pre-bid and pre-construction meetings, construction staking, contract administration, quantity accounting, full time construction inspection, final report preparation and project close-out.

ATTACHMENT 5

CONSTRUCTION BID PACKAGE DRAWINGS



Site Locations

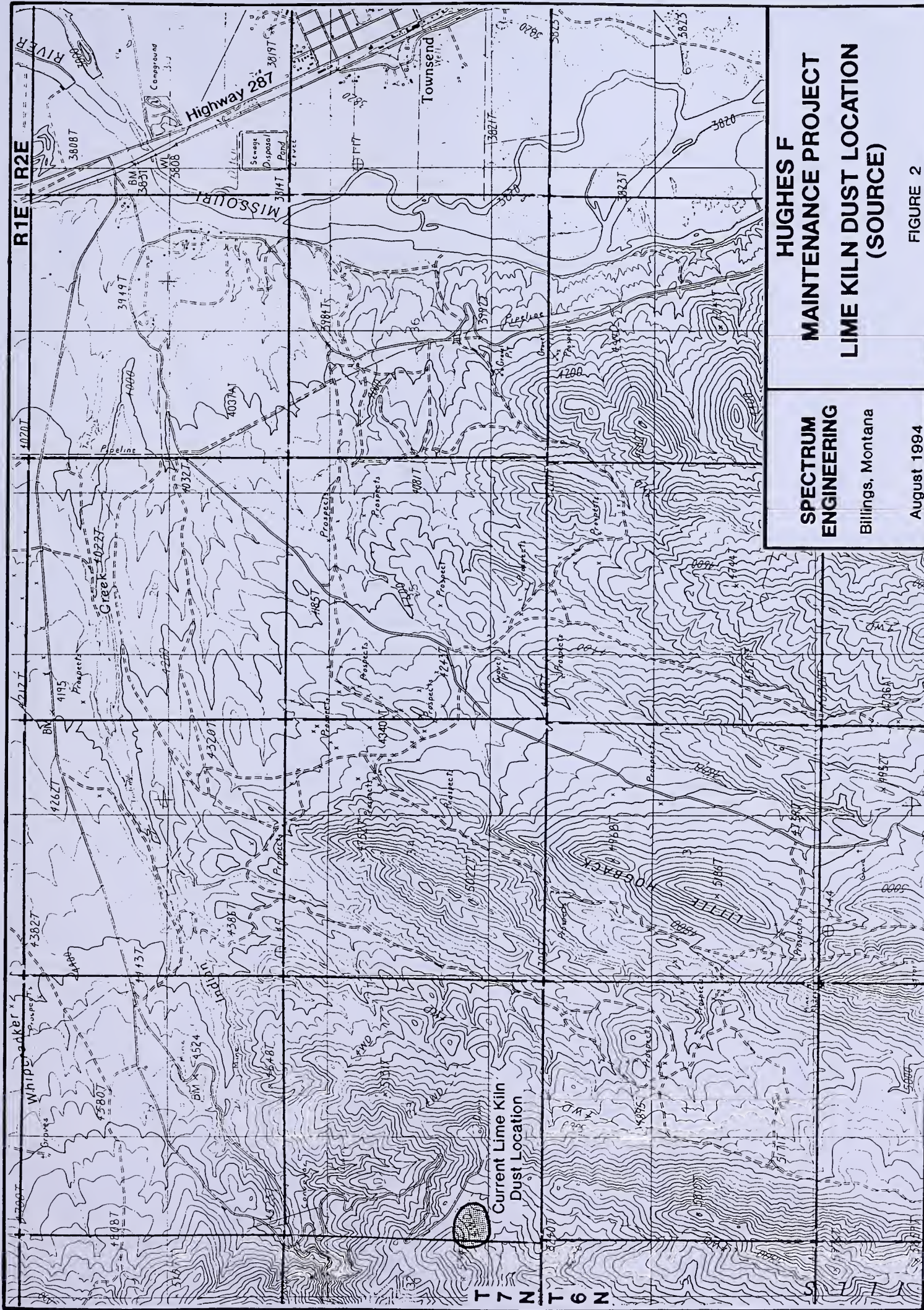
SPECTRUM
ENGINEERING

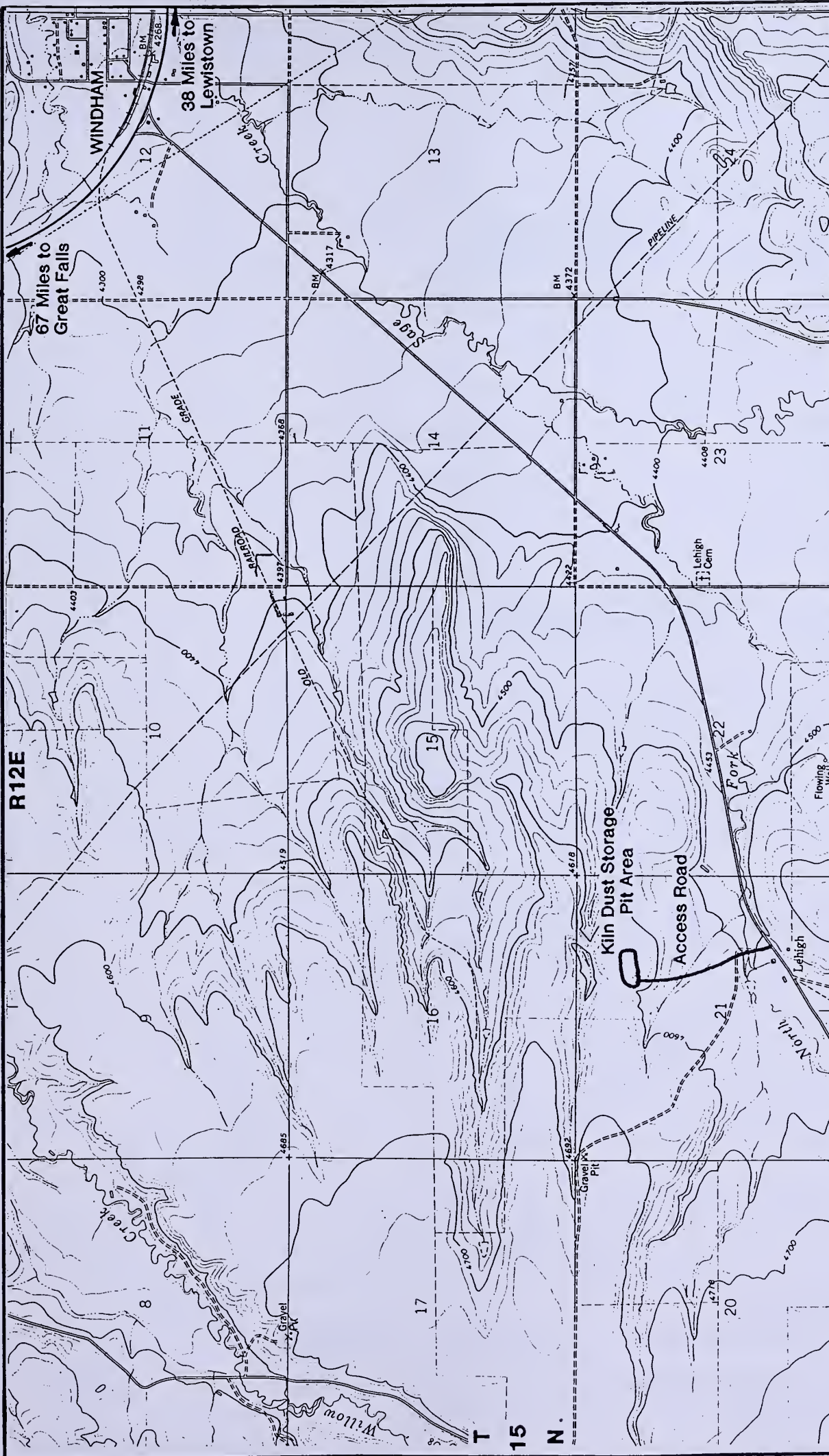
Billings, Montana

August 1994

**HUGHES F
MAINTENANCE PROJECT**
GENERAL SITE LOCATION

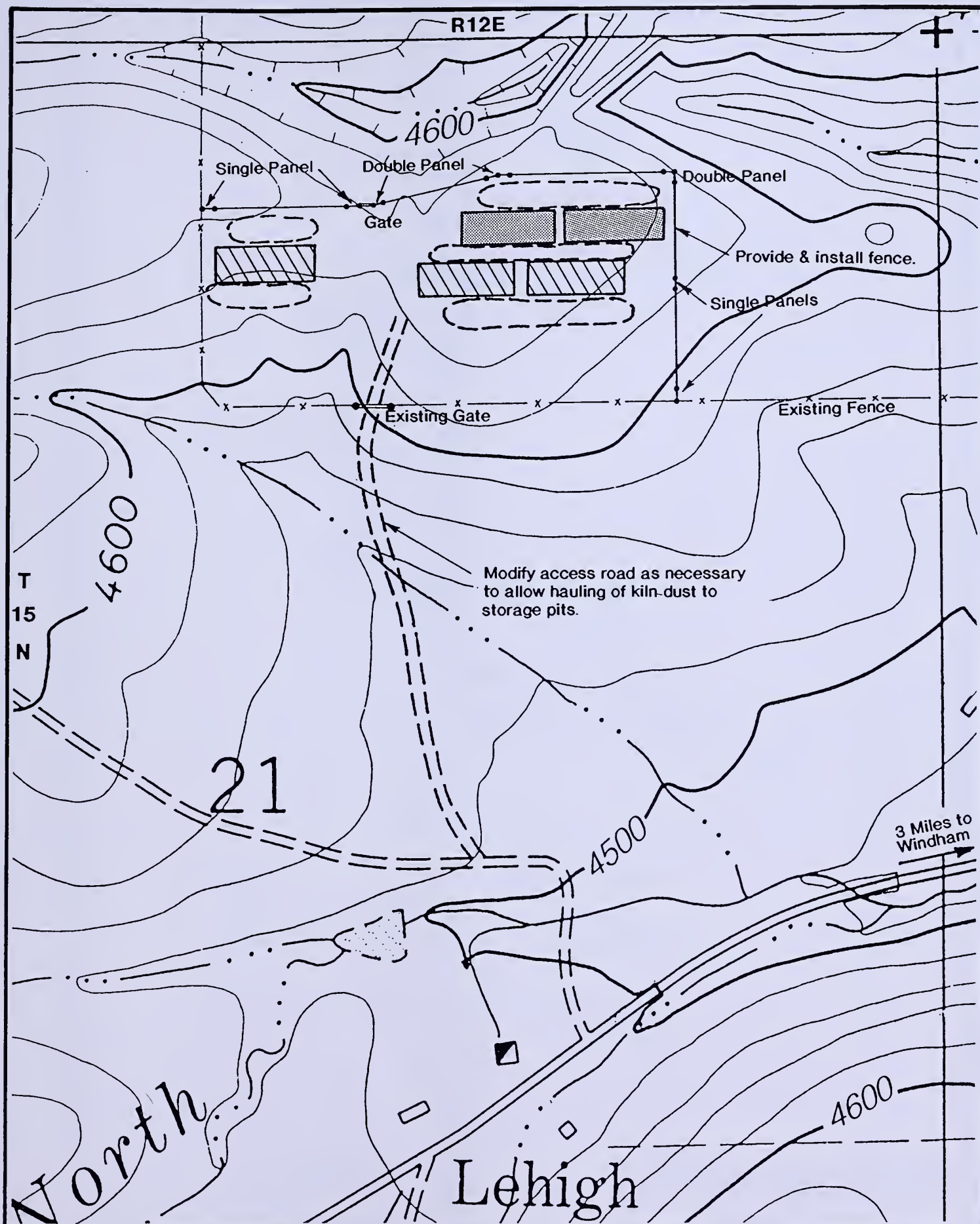
FIGURE 1





| | |
|---|---|
| HUGHES F MAINTENANCE PROJECT LIME KILN DUST STORAGE PIT LOCATION & ACCESS ROAD | SPECTRUM ENGINEERING Billings, Montana August 1984 |
|---|---|

FIGURE 3



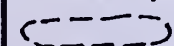
LEGEND



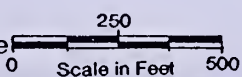
Fall 1994
2 Trench system



Spring 1995
2 Trench system



Topsoil stockpile
locations



C.I.=20'

SPECTRUM
ENGINEERING

Billings, Montana

August 1994

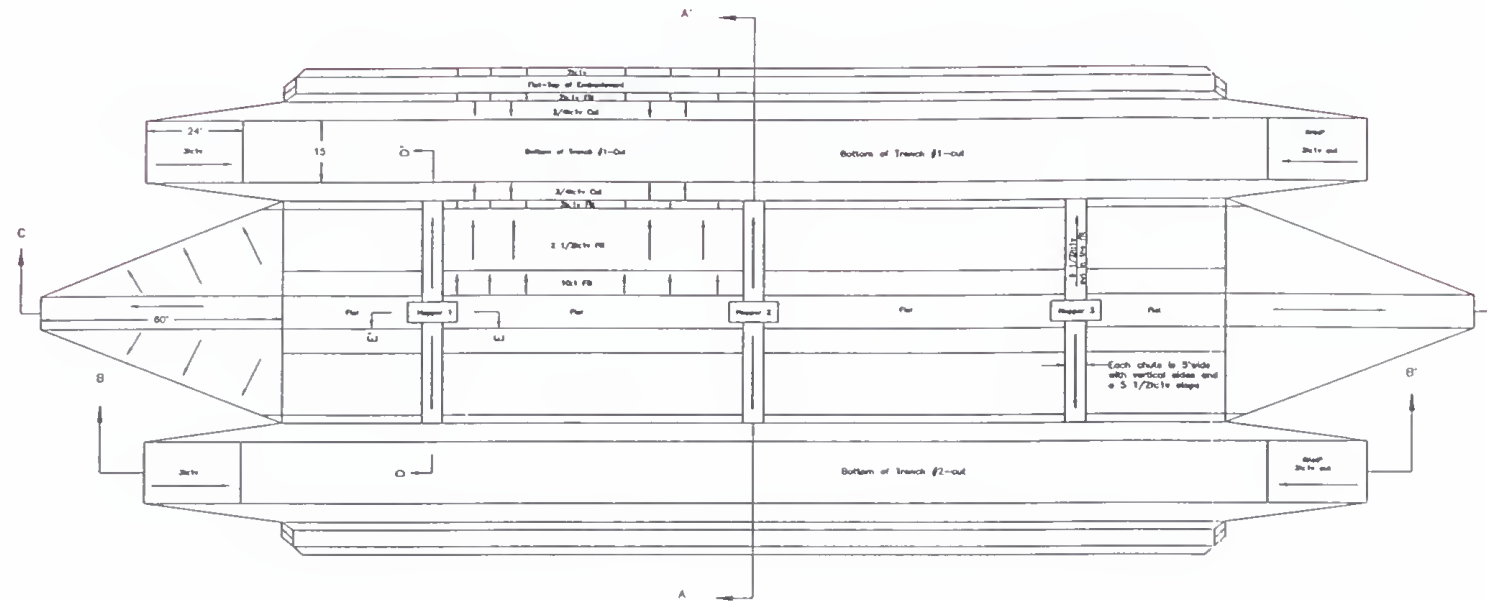
HUGHES F MAINTENANCE PROJECT LIME KILN DUST STORAGE PIT SITE PLAN

FIGURE 4

TYPICAL STORAGE TRENCH & EMBANKMENT FOR FALL OF 1994 PLAN VIEW

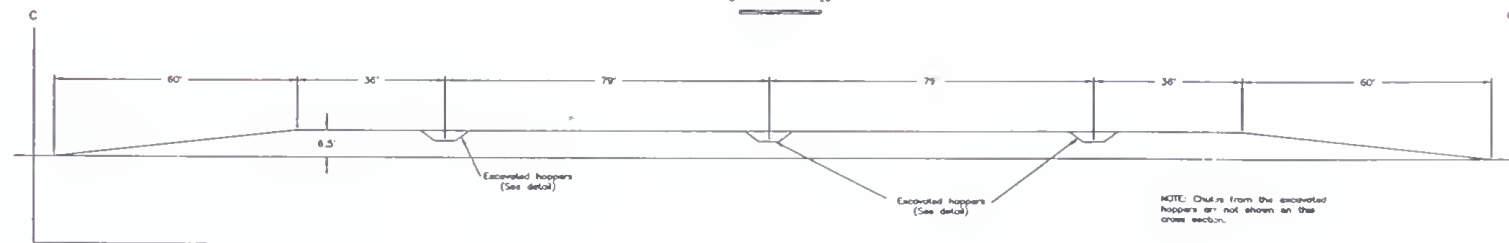
Scale in Feet
0 20

NOTE: Chutes from the excavated hoppers for Trench #2 will be excavated after Trench #1 is filled.



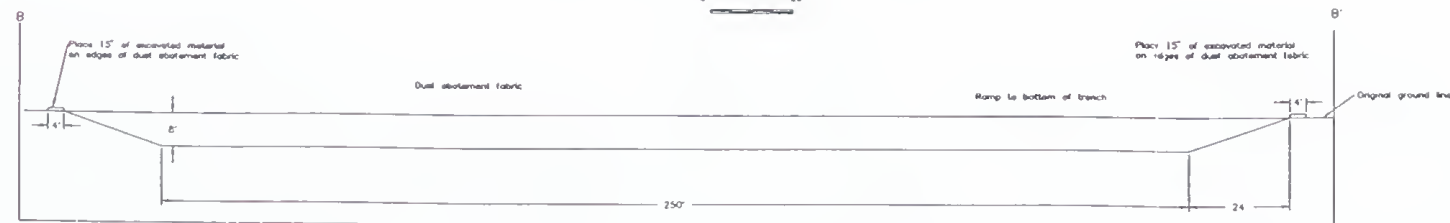
TYPICAL LONGITUDINAL CROSS SECTION OF MAIN EMBANKMENT

Scale in Feet
0 20



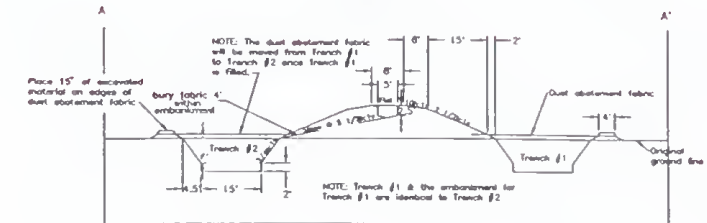
TYPICAL LONGITUDINAL CROSS SECTION OF THE EXCAVATED TRENCH

Scale in Feet
0 20



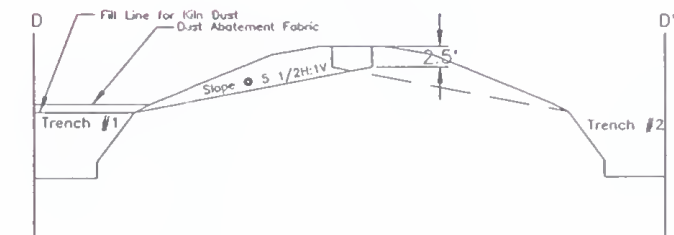
TYPICAL TRENCH CROSS SECTION

Scale in Feet
0 20



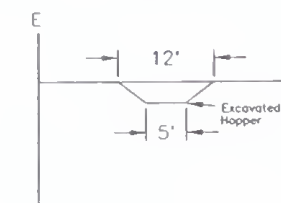
CROSS SECTION D-D'

Scale in Feet
0 10



CROSS SECTION E-E'

Scale in Feet
0 10



TYPICAL PLAN VIEWS AND CROSS SECTIONS

HUGHES F MAINTENANCE SITE

SECTION 21 T15N, R12E
JUDITH BASIN COUNTY, MONTANA

STATE OF MONTANA
DEPARTMENT OF STATE LANDS
ABANDONED MINE RECLAMATION BUREAU, RECLAMATION DIVISION

SPECTRUM ENGINEERING
Mining and Civil Engineers

1413 4th AVE NORTH
BILLINGS, MONTANA

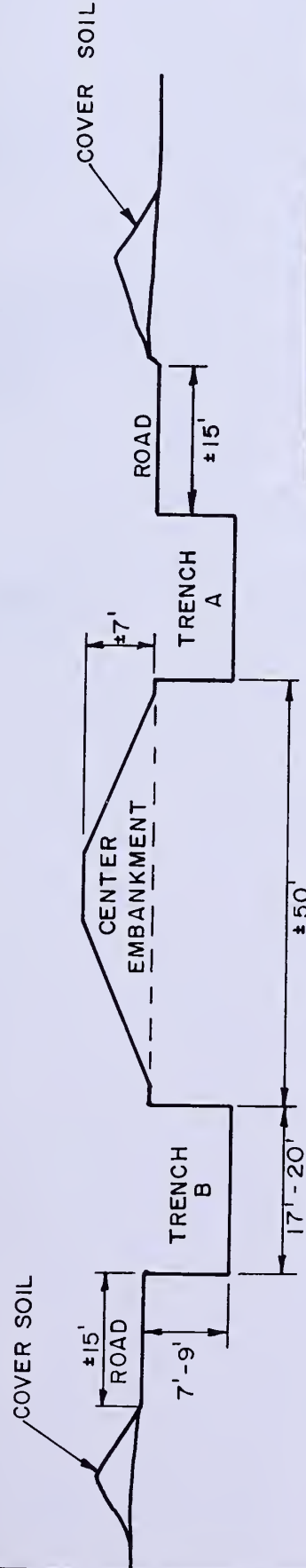
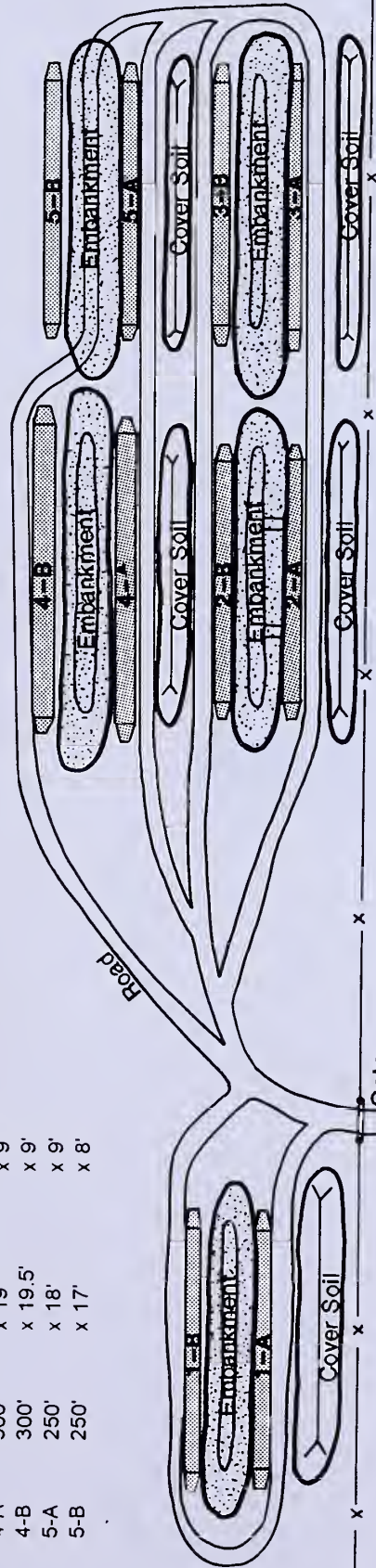
| | |
|-------------|------|
| DATE | |
| DESIGNED BY | |
| CHECKED BY | |
| APPROVED BY | |
| NO. | DATE |
| | |
| | |

SHEET NO. 1 OF 1

ATTACHMENT 6

AS-BUILT DRAWINGS

| PIT | LENGTH | WIDTH | DEPTH |
|-----|--------|---------|--------|
| 1-A | 250' | x 19.5' | x 8' |
| 1-B | 250' | x 20' | x 7' |
| 2-A | 250' | x 18.5' | x 8' |
| 2-B | 250' | x 18' | x 9' |
| 3-A | 250' | x 20' | x 8.5' |
| 3-B | 250' | x 18.5' | x 8.5' |
| 4-A | 300' | x 19' | x 9' |
| 4-B | 300' | x 19.5' | x 9' |
| 5-A | 250' | x 18' | x 9' |
| 5-B | 250' | x 17' | x 8' |



HUGHES F
MAINTENANCE PROJECT
LIME KILN DUST STORAGE PIT
AS-BUILT PLAN

SPECTRUM
ENGINEERING
Billings, Montana

ATTACHMENT 7

**PHOTOGRAPH & SLIDE
DESCRIPTIONS**

AND

PHOTOGRAPHS

HUGHES F MAINTENANCE PROJECT PHOTO & SLIDE DESCRIPTIONS

| <u>ASSIGNED NUMBER</u> | <u>DATE TAKEN</u> | <u>SUBJECT OR COMMENTS</u> |
|----------------------------|-----------------------|---|
| 1 | 12-17-94 | Contractor's equipment - Terex TS-18 scraper |
| 2 | 12-14-94 | Contractor's equipment - Terex TS-18 scraper |
| 3 | 12-14-94 | Contractor's equipment - Galion T-500 motor grader |
| 4 | 12-22-94 | Contractor's equipment - Caterpillar 14 motor grader |
| 5 | 12-15-94 | Contractor's equipment - Ford fuel truck |
| 6 | 12-15-94 | Contractor's equipment - Caterpillar D-8 bulldozer |
| 7 | 03-30-95 | Contractor's equipment - 690 Deere excavator |
| 8 | 03-30-95 | Contractor's equipment - Hough Pay Loader 90 |
| 9 | 03-30-95 | Contractor's equipment - 14 E motor grader |
| 10 | 03-31-95 | Contractor's equipment - Transystems truck and pup |
| 11 | 03-31-95 | Contractor's equipment - Belly dump |
| 12 | 04-05-95 | Contractor's equipment - Ford dump truck/ trailer |
| 13 | 04-07-95 | Contractor's equipment - International water truck |
| 14 | 05-11-95 | Youderian Construction truck & backhoe Cat 205 LC |
| 15 | 05-24-95 | Contractor's equipment - 975 Bobcat skid steer loader |
| 16 | 05-24-95 | Contractor's equipment - Transport with trailers (Peter Bilt) |
| 17 | 05-30-95 | Contractor's equipment - 950 MC water truck 4000 gallons |
| 18 | 12-09-94 | Site entrance off main road |
| 19 | 12-14-94 | Pre-construction trench system #1 looking Southwest |
| 20 | 12-15-94 | D-8 bulldozer ripping 8" - 12" of frost on trench system #1 |
| 21 | 12-15-94 | Scraper and bulldozer working trench system #1 |
| 22 | 12-15-94 | Coversoil pile for trench system #1 |
| 23 | 12-15-94 | Pre-construction view of trench system #3 looking Southwest |
| 24 | 12-16-94 | Ripping trench system #2 |
| 25 | 12-16-94 | Looking Southwest at coversoil off trench system #1 |

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

| EXPERIMENTAL DATA | | DATE | TIME |
|----------------------------|---------------|------|------|
| 1. Sample Description | | | |
| Sample Name | Sample No. | | |
| Sample Weight | Sample Volume | | |
| 2. Experimental Conditions | | | |
| Temperature | Pressure | | |
| Time | Concentration | | |
| 3. Results and Discussion | | | |
| 4. Conclusions | | | |
| 5. References | | | |
| 6. Appendix | | | |
| 7. Notes | | | |
| 8. Acknowledgments | | | |
| 9. Bibliography | | | |
| 10. Index | | | |

HUGHES F MAINTENANCE PROJECT PHOTO & SLIDE DESCRIPTIONS

| <u>ASSIGNED NUMBER</u> | <u>DATE TAKEN</u> | <u>SUBJECT OR COMMENTS</u> |
|----------------------------|-----------------------|--|
| 26 | 12-16-94 | Excavating north trench of trench system #1 |
| 27 | 12-17-94 | Depth of coversoil trench system #2, 8" - 12" |
| 28 | 12-19-94 | Excavating south trench of trench system #1 |
| 29 | 12-19-94 | North trench of trench system #1 |
| 30 | 12-19-94 | Excavating south trench of trench system #2 |
| 31 | 12-20-94 | South trench of #2 trench system excavated |
| 32 | 12-20-94 | Excavation coversoil trench system #3 |
| 33 | 12-21-94 | North trench of #2 trench system excavated |
| 34 | 12-21-94 | South trench of #2 trench system excavated |
| 35 | 12-22-94 | Excavation of coversoil trench system #4 |
| 36 | 12-22-94 | North trench of #3 trench system excavated |
| 37 | 12-22-94 | South trench of #3 trench system excavated |
| 38 | 12-22-94 | Coversoil ripped on trench system #5 |
| 39 | 12-28-94 | Excavation coversoil off trench system #5 |
| 40 | 12-28-94 | Excavation s half of trench system #4 |
| 41 | 12-29-94 | Excavation of North trench of #4 trench system |
| 42 | 01-05-95 | Completed trenches 4-A & 4-B |
| 43 | 12-29-94 | Excavation of trench system #5 |
| 44 | 12-29-94 | North side of trench system #4 excavated |
| 45 | 12-29-94 | Excavated trench system #4 |
| 46 | 12-29-94 | Excavation South side of trench system #5 |
| 47 | 01-03-95 | Excavating trench 5-B |
| 48 | 01-04-95 | Grading embankment for trench 5-B |
| 49 | 12-21-94 | Pre-construction access road |
| 50 | 12-21-94 | Pre-construction access road |

HUGHES F MAINTENANCE PROJECT PHOTO & SLIDE DESCRIPTIONS

| <u>ASSIGNED NUMBER</u> | <u>DATE TAKEN</u> | <u>SUBJECT OR COMMENTS</u> |
|----------------------------|-----------------------|---|
| 51 | 01-05-95 | Installed culvert in access road |
| 52 | 01-05-95 | Access road prior to grading |
| 53 | 01-05-95 | Looking down at access road |
| 54 | 01-05-95 | New access road |
| 55 | 12-29-94 | Temporary fence on January 23, 1995 |
| 56 | 03-31-95 | Continental Lime - Transystem's scale |
| 57 | 03-31-95 | Continental Lime - Lime kiln dust trench |
| 58 | 03-31-95 | Continental Lime - Lime kiln dust trench |
| 59 | 03-31-95 | Continental Lime - Loading truck at plant |
| 60 | 03-31-95 | Continental Lime - Mine at Townsend |
| 61 | 03-31-95 | Continental Lime - Truck loaded and tarped |
| 62 | 03-30-95 | Excavation of side slope trench 2-B |
| 63 | 03-30-95 | Blade bottom trench 2-B |
| 64 | 03-31-95 | Drive over dump grate |
| 65 | 03-31-95 | Drive over dump grate and chute |
| 66 | 03-31-95 | Laying fabric over trench 2-B |
| 67 | 03-31-95 | Trench 2-B covered/ fabric |
| 68 | 04-05-95 | Installing drive over grate |
| 69 | 04-05-95 | Grate, hopper and chute without metal and plywood liner |
| 70 | 04-05-95 | Steel plate in bottom of chute |
| 71 | 04-06-95 | Drive-over grate and chute installed in trench system #2 embankment |
| 72 | 04-06-95 | Fabric cover on trench 2-A |
| 73 | 04-06-95 | Laying poles across trenches |
| 74 | 04-06-95 | Dumping truck into trench 2-B |
| 75 | 04-06-95 | Lime kiln dust build up in hopper and on grate |

**HUGHES F MAINTENANCE PROJECT
PHOTO & SLIDE DESCRIPTIONS**

| <u>ASSIGNED NUMBER</u> | <u>DATE TAKEN</u> | <u>SUBJECT OR COMMENTS</u> |
|----------------------------|-----------------------|--|
| 76 | 04-06-95 | Lime kiln dust build up in hopper and chute |
| 77 | 04-07-95 | Slope edge of trench |
| 78 | 04-08-95 | Excavating road along edge of trench 5-B |
| 79 | 04-08-95 | 10 loads in trench 5-B |
| 80 | 04-12-95 | Hauling over muddy access road |
| 81 | 03-31-95 | Excavating road along trench 2-A |
| 82 | 04-13-95 | Filling in mud hole |
| 83 | 04-21-95 | Blade kiln dust lime into trench 4-A |
| 84 | 04-21-95 | Push kiln dust lime into trench 4-A |
| 85 | 04-21-95 | Pulling trucks with loader and unloading |
| 86 | 04-21-95 | Blade kiln dust lime into trench 4-A |
| 87 | 04-22-95 | Trench 4-A filled |
| 88 | 04-22-95 | Lime from drive over grates and chute system in trench 2-B |
| 89 | 04-27-95 | Push lime across trench 4-B with hydraulic excavator |
| 90 | 04-27-95 | Trench 4-A filled |
| 91 | 04-27-95 | Trench 5-A filled |
| 92 | 04-27-95 | Push lime across trench at end of trench 3-A |
| 93 | 05-02-95 | Trench 2-A filled |
| 94 | 05-03-95 | Transystems truck and trailers |
| 95 | 05-04-95 | Trench 2-B started |
| 96 | 05-11-95 | Haul road trench 1-B |
| 97 | 05-11-95 | Cat 205 LC distributing lime kiln dust in trench |
| 98 | 05-12-95 | Cat 205 LC distributing lime kiln dust in trench 3-B |
| 99 | 05-16-95 | Starting to load trench 1-B |
| 100 | 05-23-95 | Trench 1-A three-quarters filled |

**HUGHES F MAINTENANCE PROJECT
PHOTO & SLIDE DESCRIPTIONS**

| <u>ASSIGNED NUMBER</u> | <u>DATE TAKEN</u> | <u>SUBJECT OR COMMENTS</u> |
|----------------------------|-----------------------|--|
| 101 | 05-31-95 | Trench 5-B filled with lime kiln dust |
| 102 | 05-31-95 | Trench 5-A filled with lime kiln dust |
| 103 | 05-31-95 | Trench 4-B filled with lime kiln dust |
| 104 | 05-31-95 | Trench 4-A filled with lime kiln dust |
| 105 | 05-24-95 | Loading concrete blocks brought in to anchor trench cover |
| 106 | 05-24-95 | Rolling up trench cover |
| 107 | 05-24-95 | Concrete block and poles for trench covers loaded |
| 108 | 05-30-95 | Clean up of trench 5-B |
| 109 | 05-30-95 | Grading haul road |
| 110 | 05-30-95 | Watering down lime to form cake on top |
| 111 | 05-30-95 | Rolling covering up |
| 112 | 05-30-95 | Haul road graded |
| 113 | 05-30-95 | Loading up iron plate used to line chute on trench system #2 |
| 114 | 05-31-95 | Trench covers rolled up |

CONTRACTOR'S EQUIPMENT



1



3



2





8



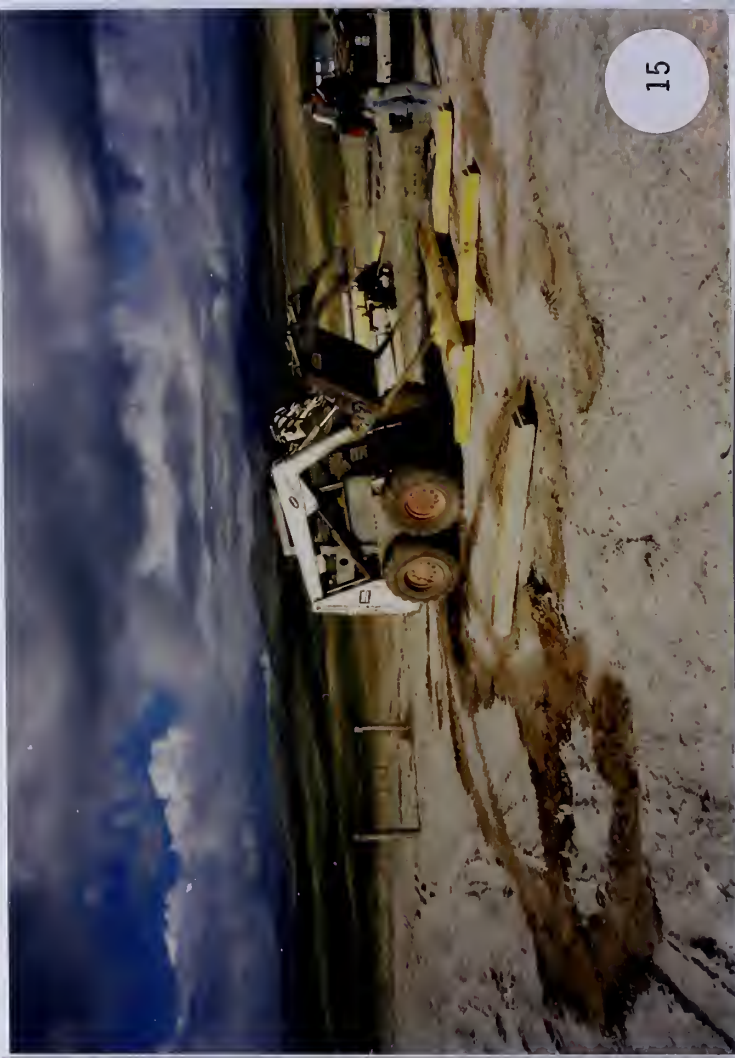
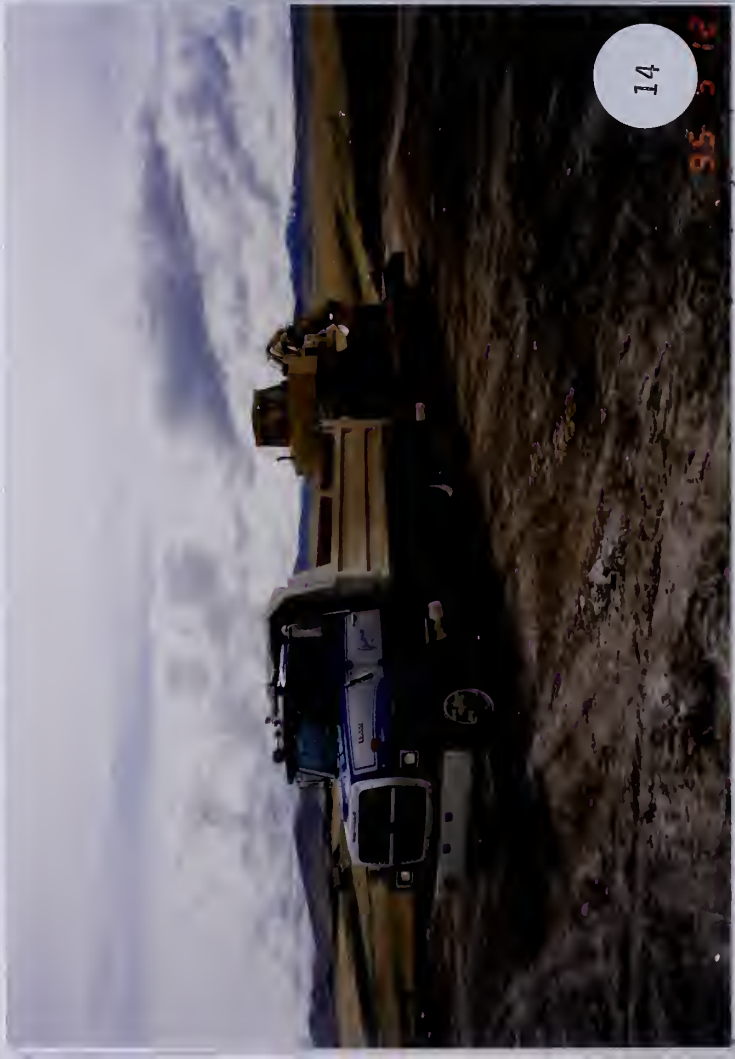
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10



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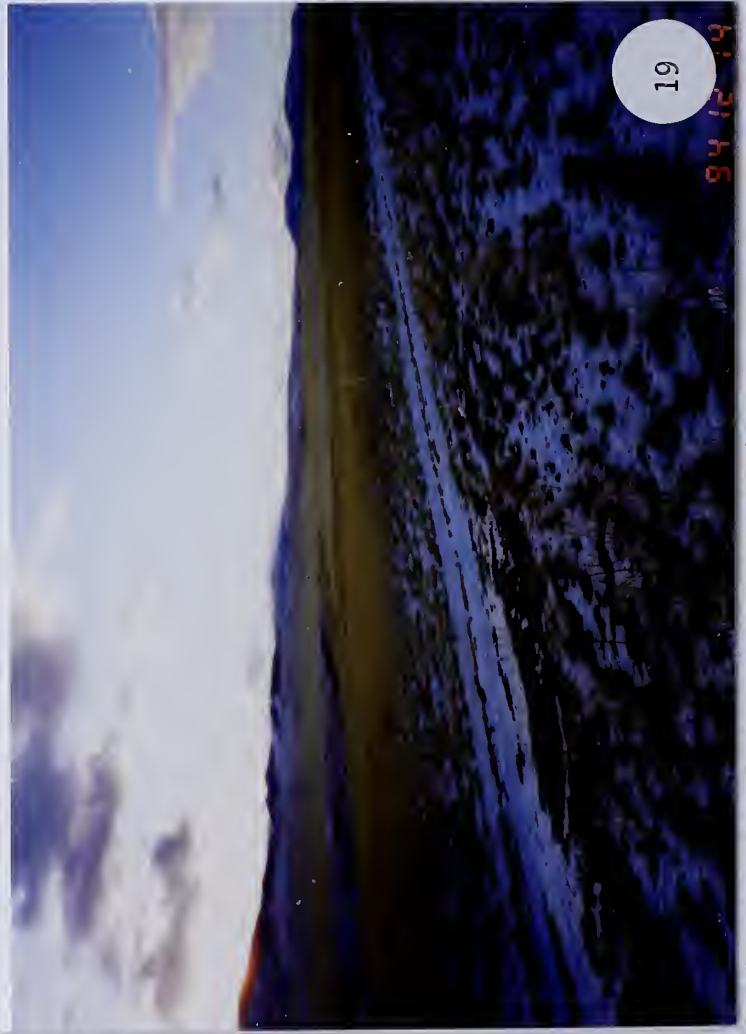
Roll 1 - 21



PRE-CONSTRUCTION LEHIGH SITE



18



19

Roll # 110 # 15

STORAGE TRENCH CONSTRUCTION



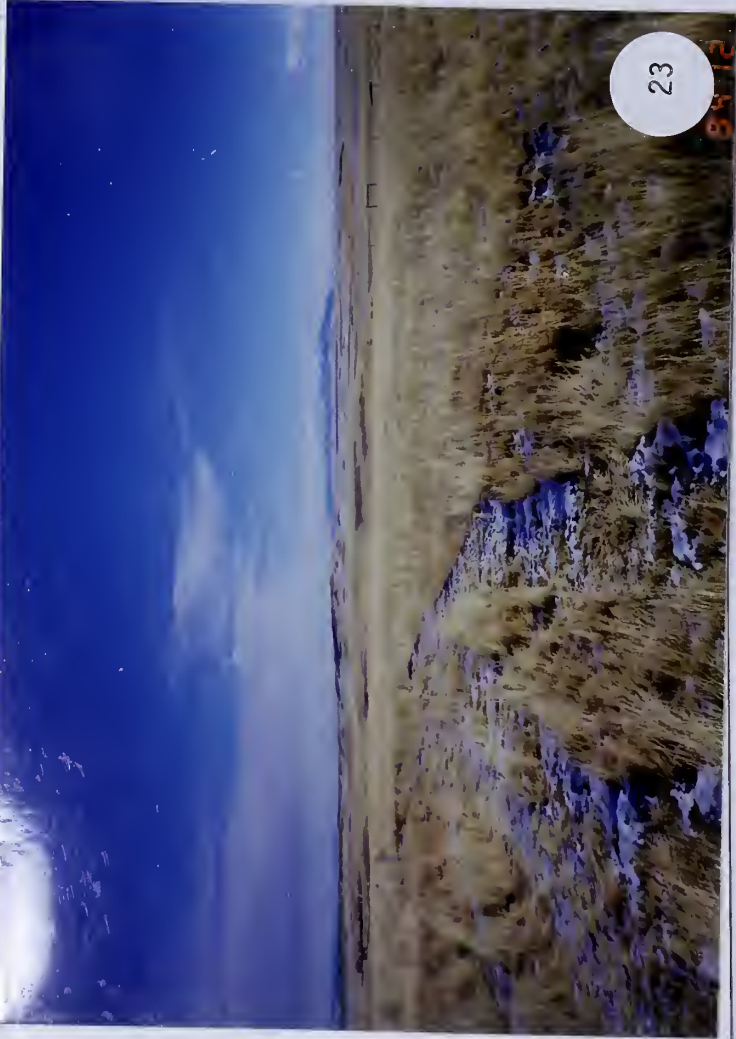
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21



22



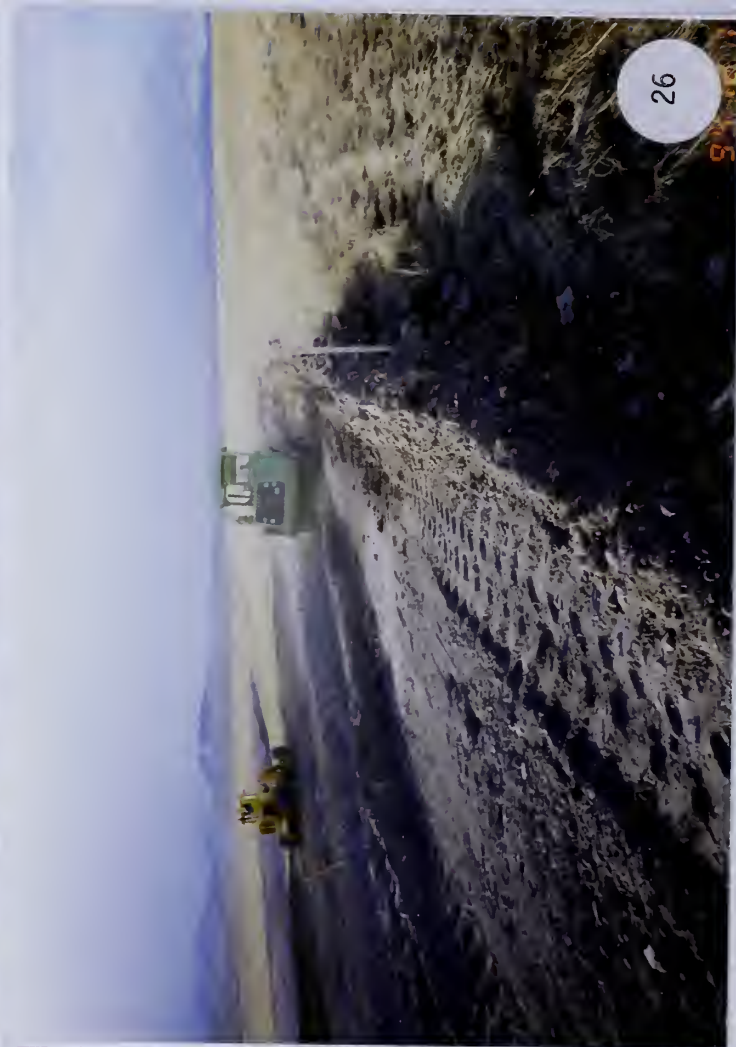
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24



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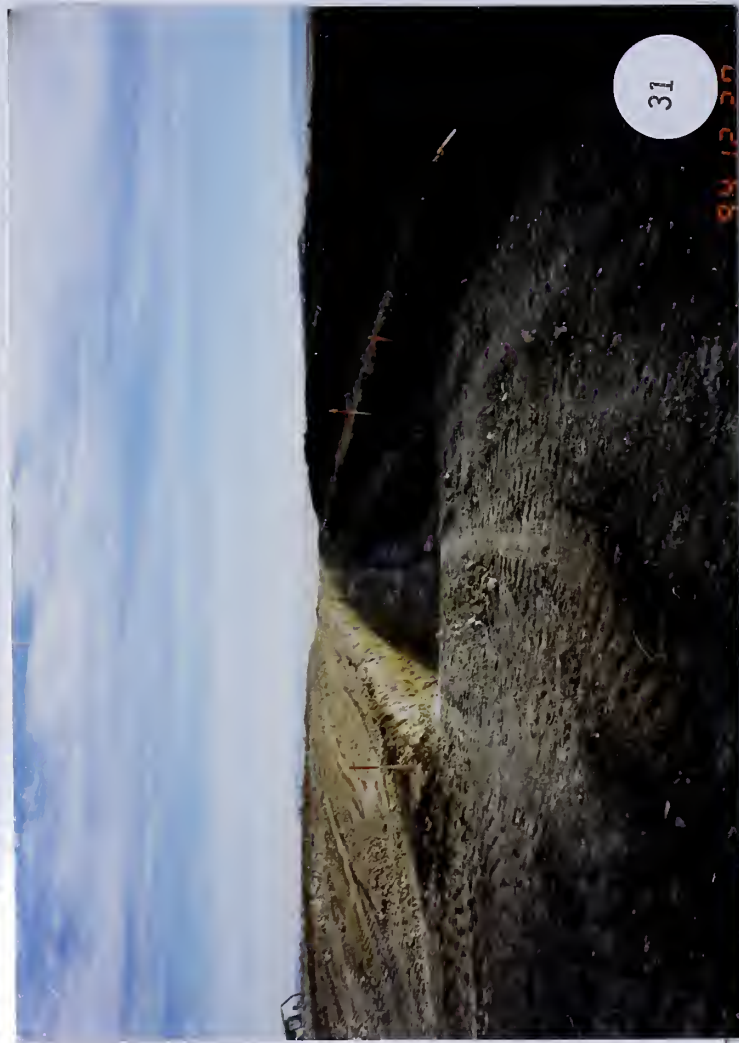
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29



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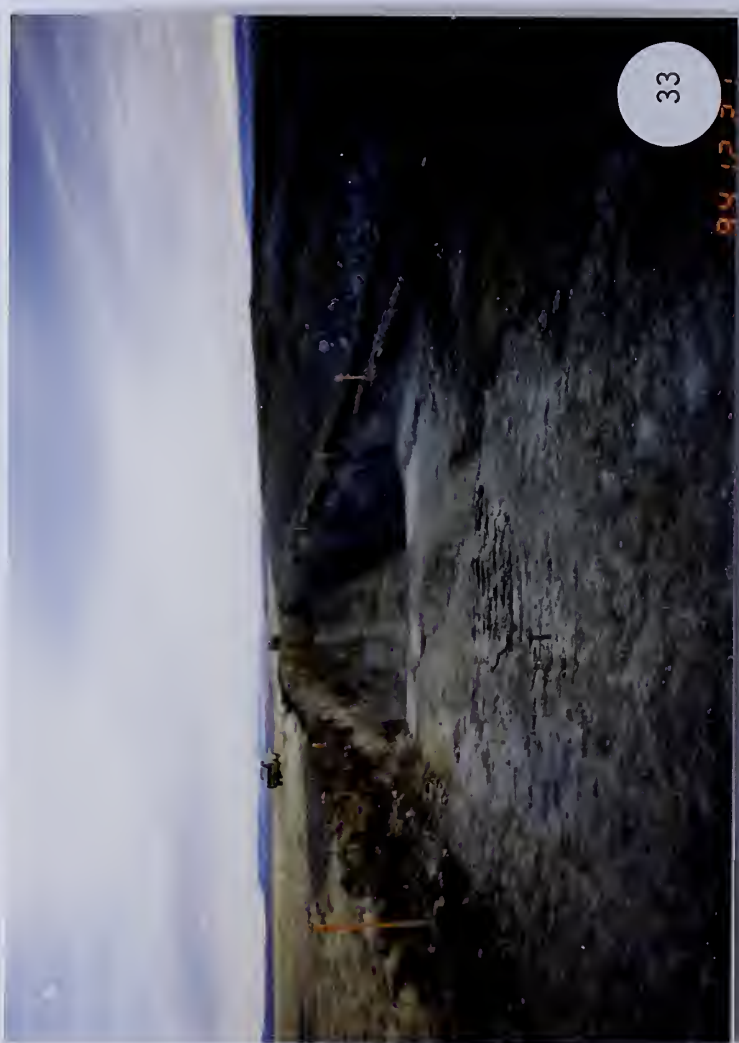
31

94.12.20



32

94.12.20



33

94.12.20

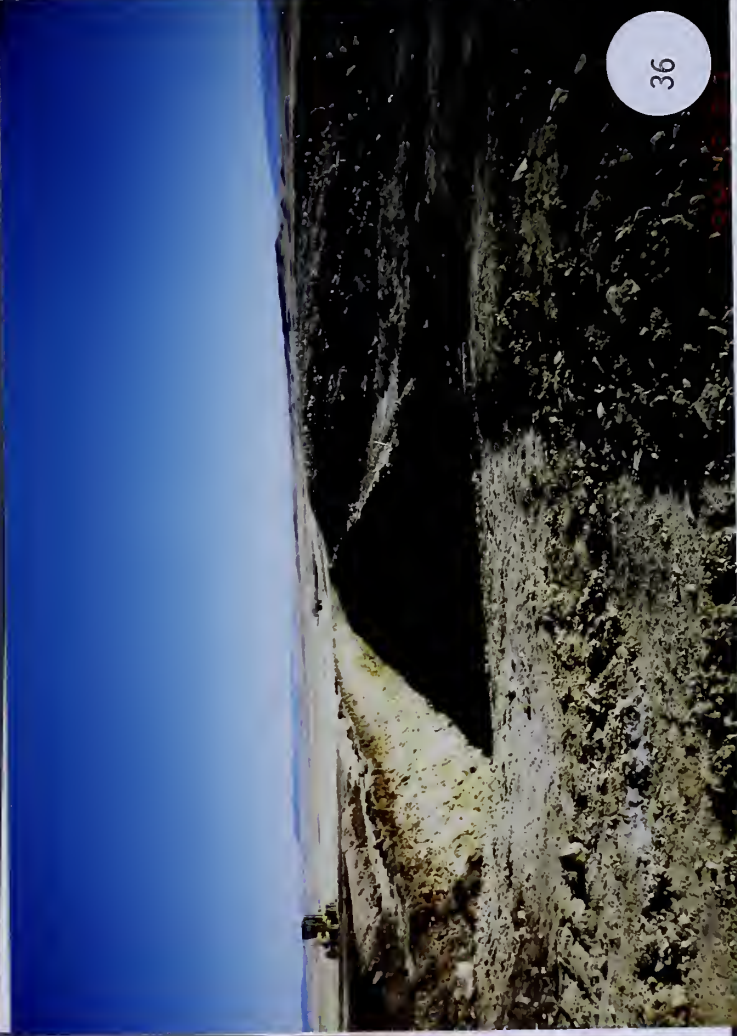


34

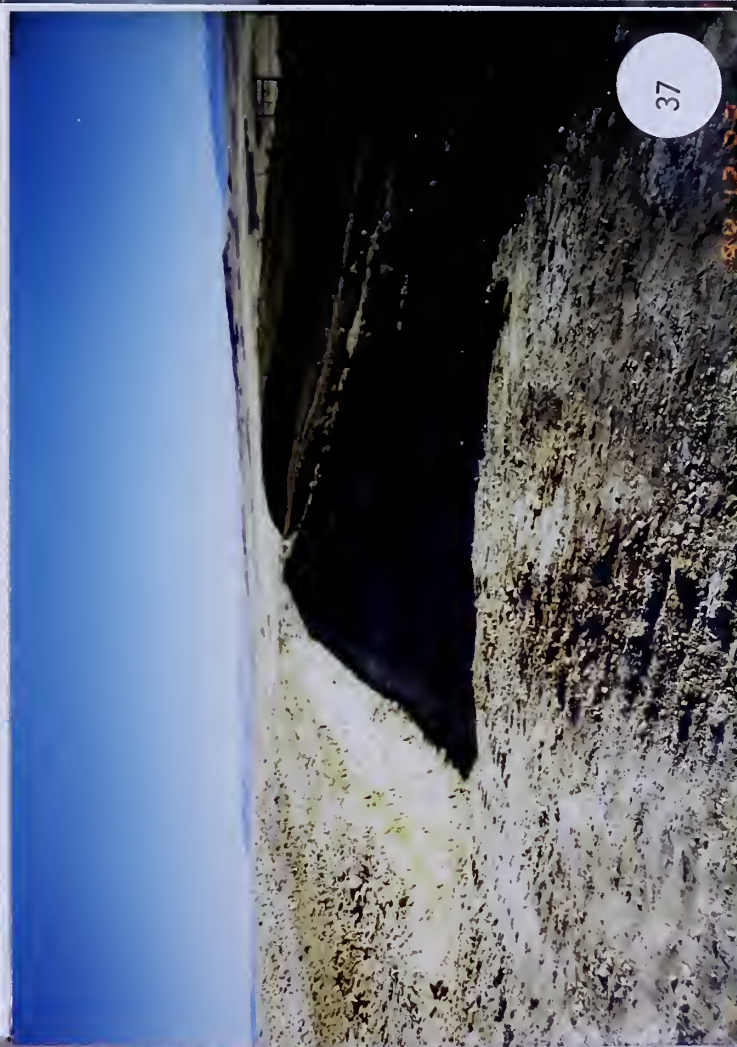
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84 12 38



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84 13 38



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84 12 38



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94.12.29



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1.

2-24

2-24

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ACCESS ROAD MODIFICATION



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84 12 22



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84 12 22



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CONTINENTAL LIME LOADING SITE



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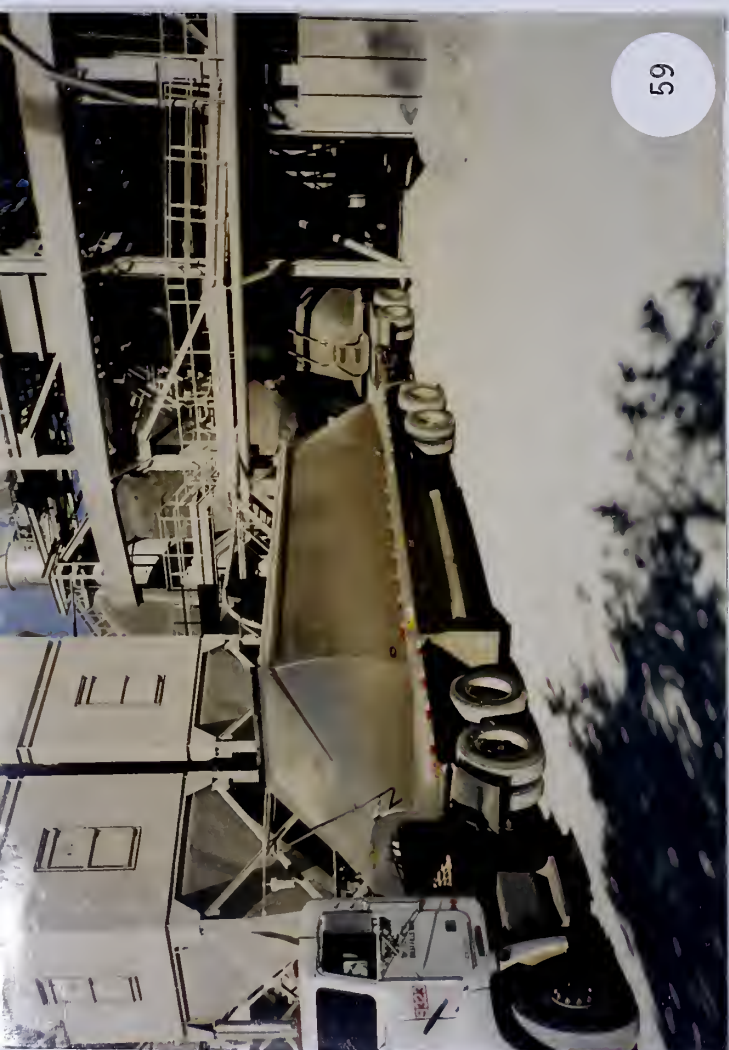
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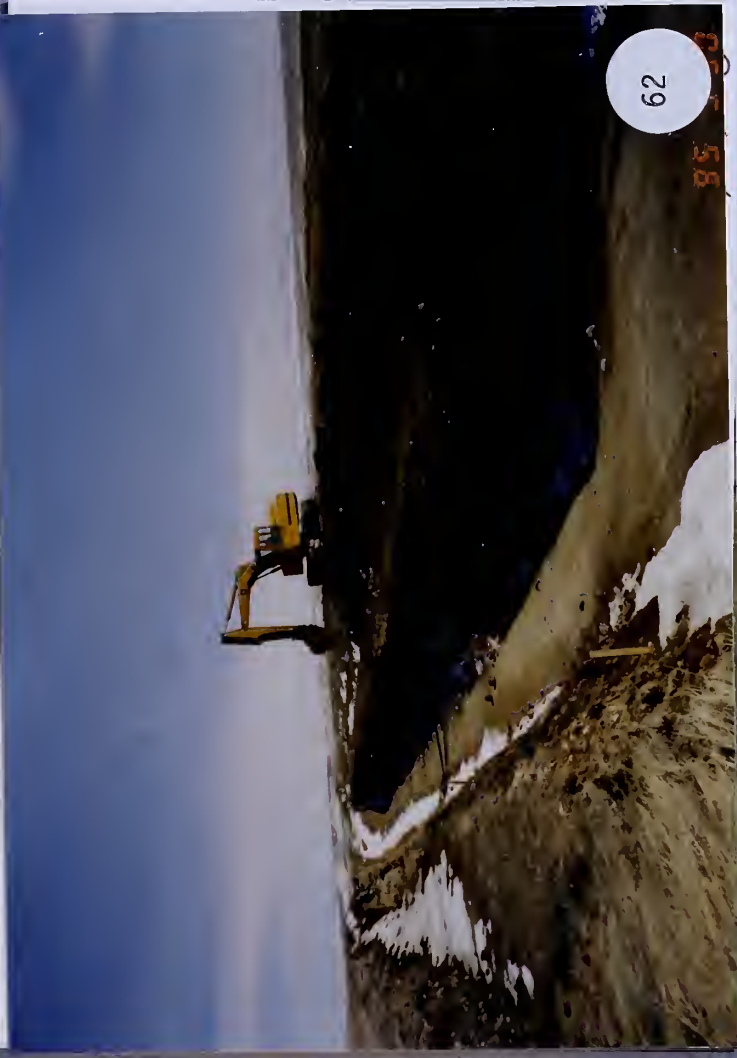
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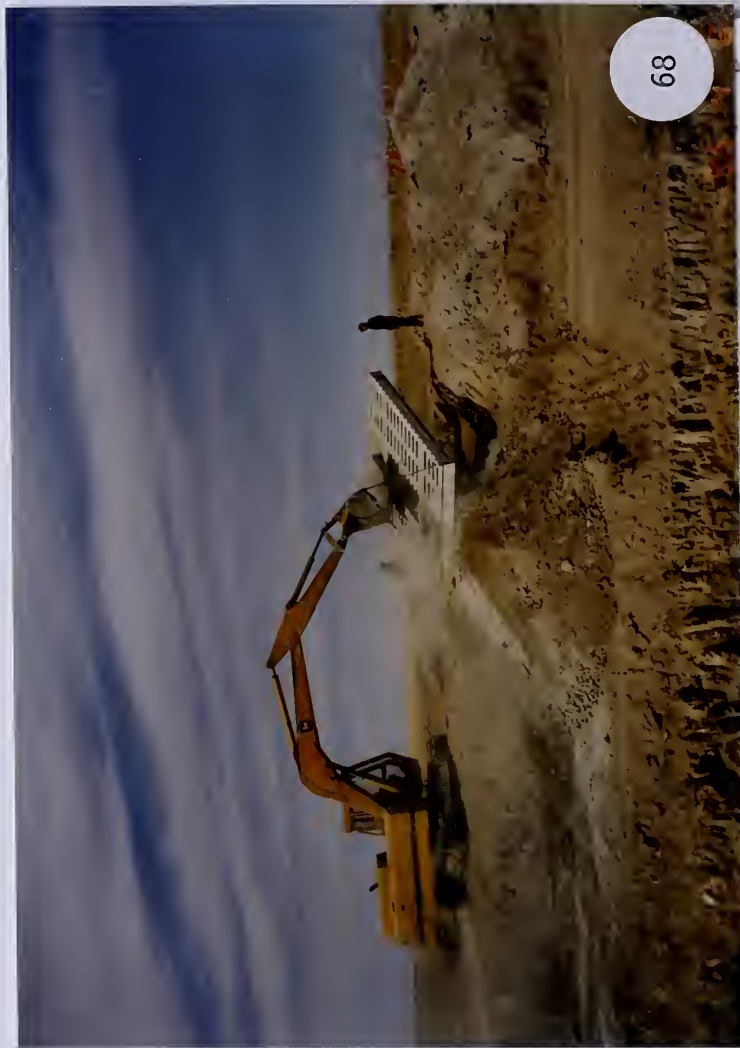


59



TRIAL DUMP USING DESIGNED TRANSFER SYSTEM





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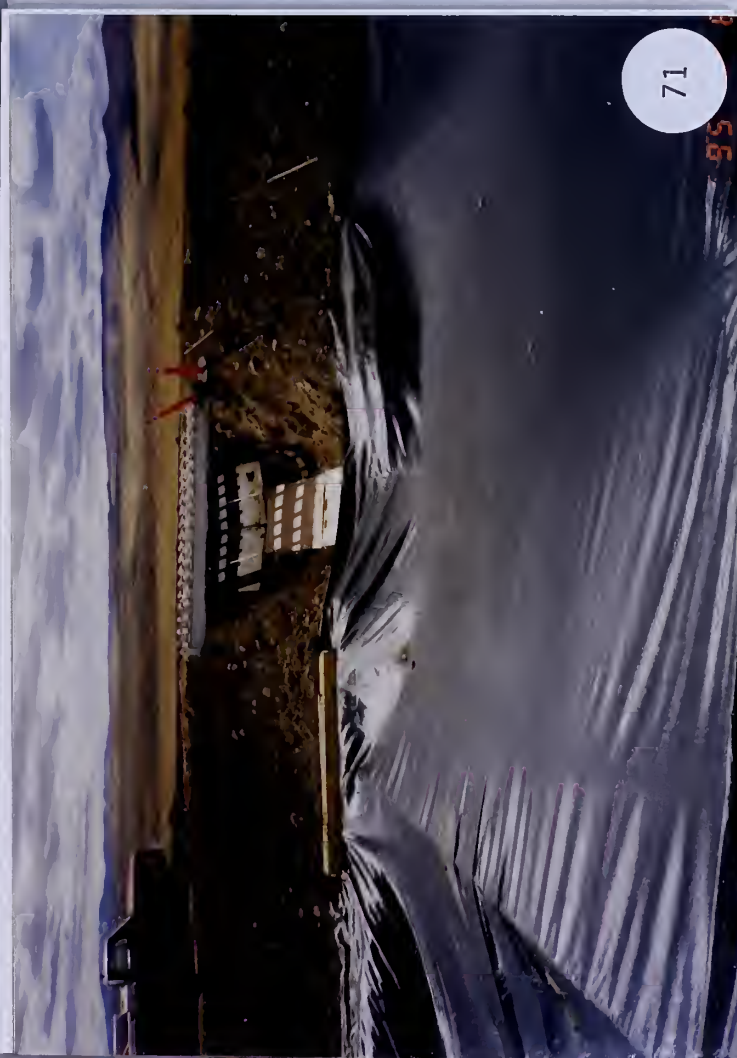
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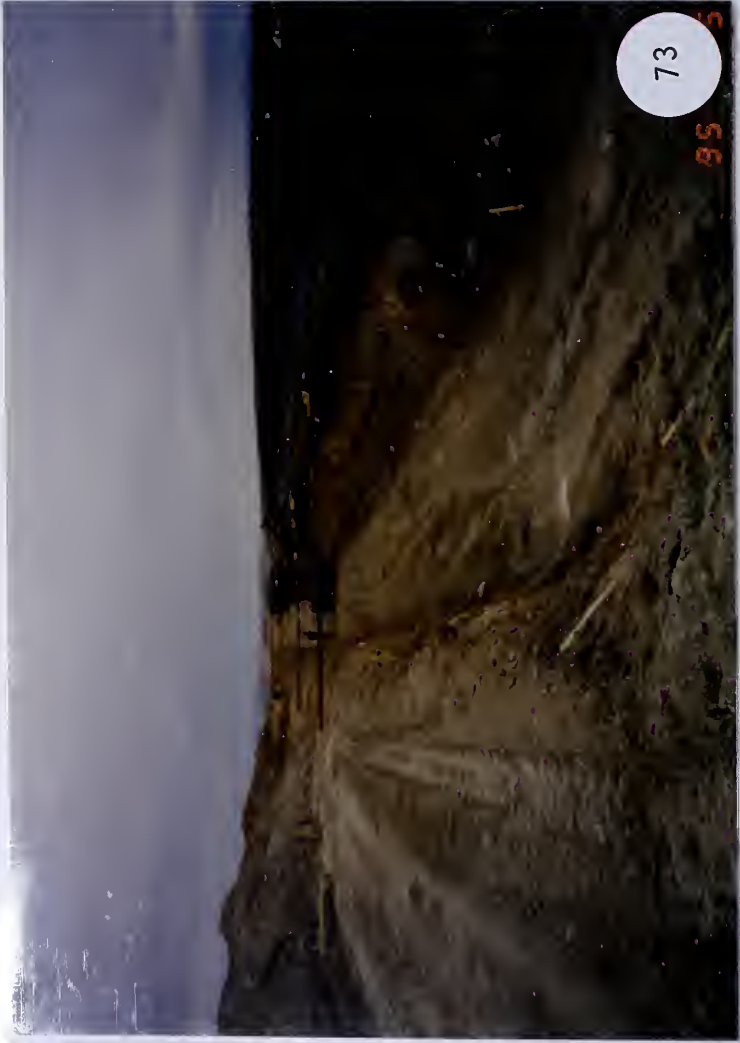
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95 33



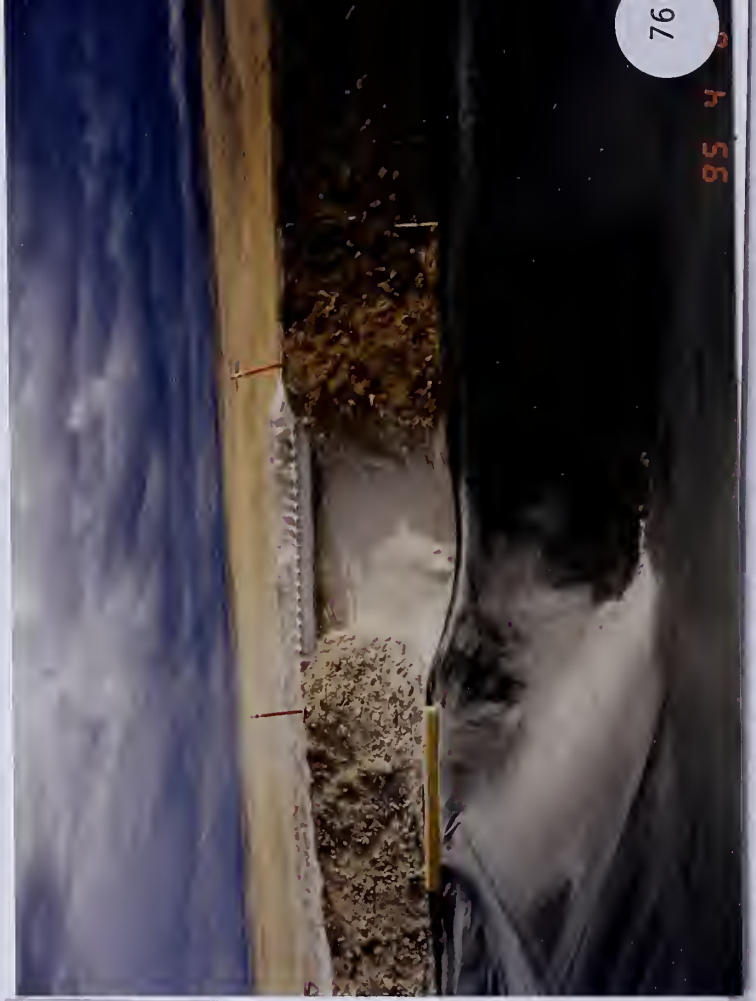
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95 33



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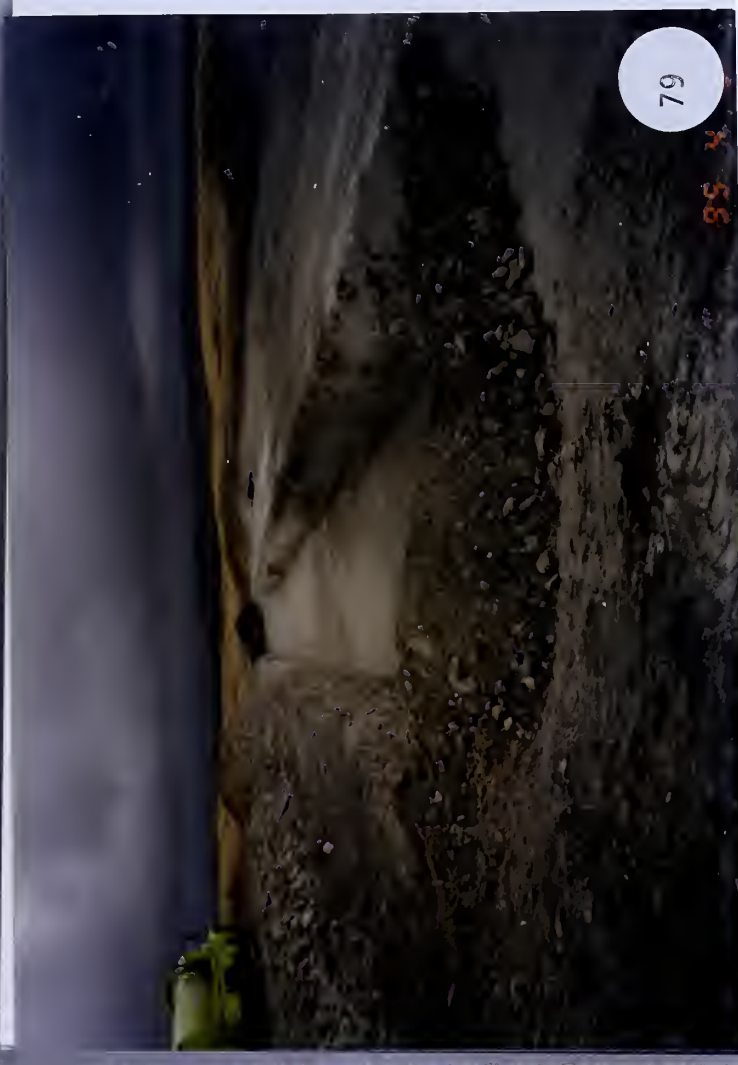
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LIME KILN DUST UNLOADING AND HANDLING



78

85

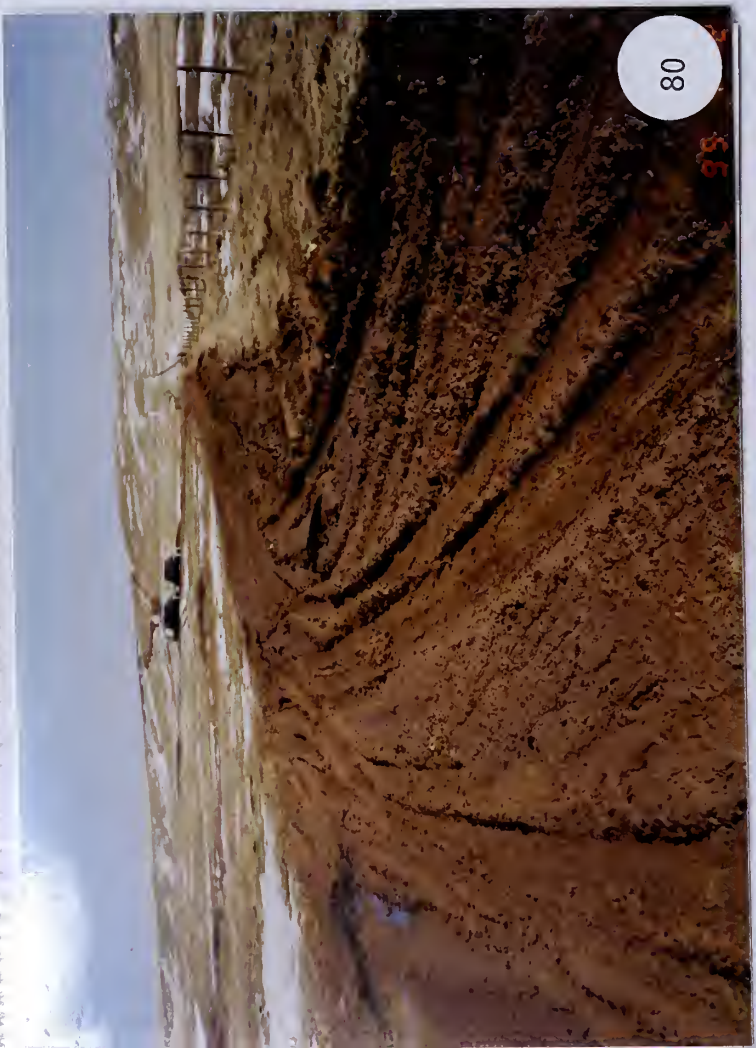


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95 80 100



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95 81 100



82

95 82 100



83

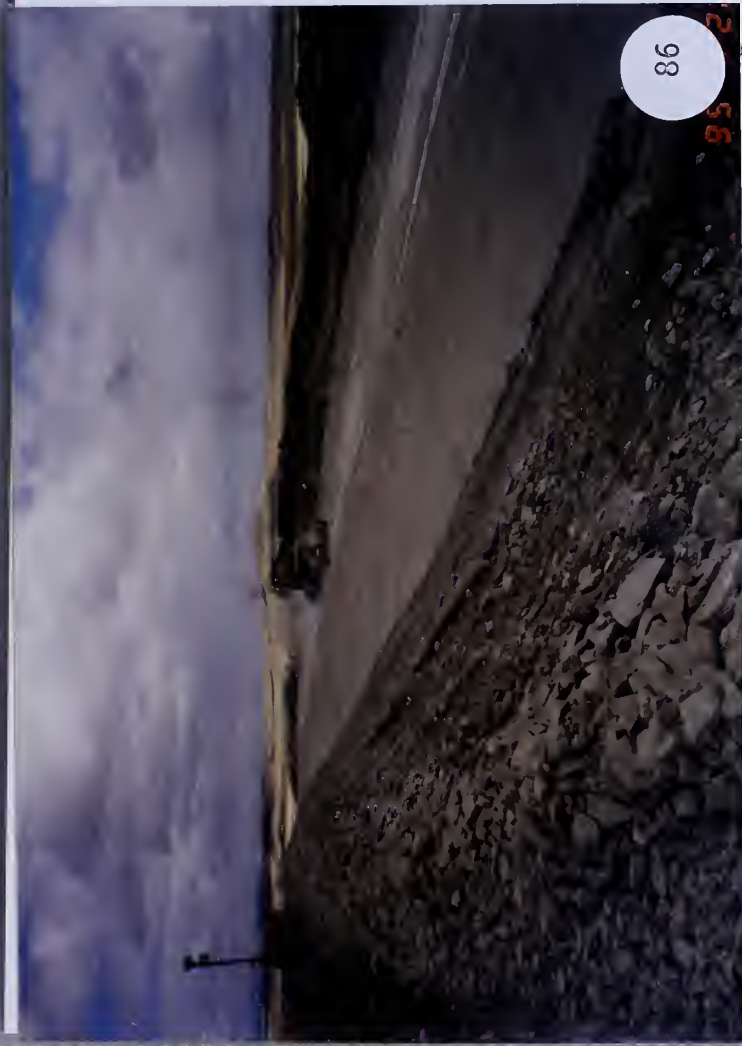
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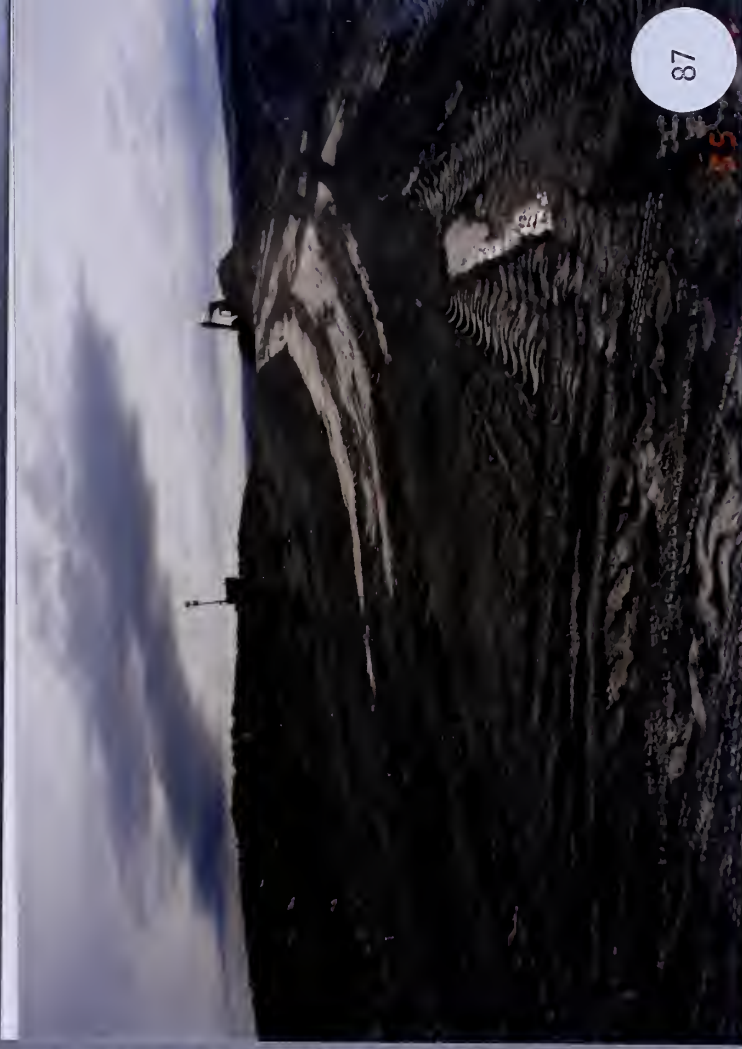
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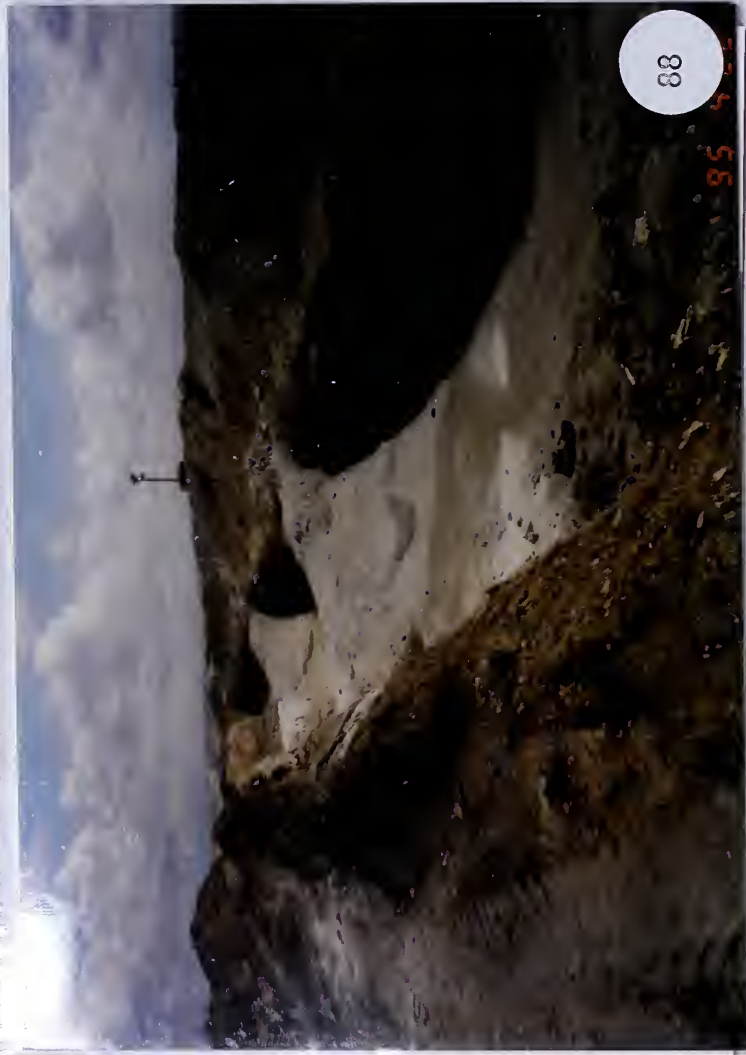
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95 3



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95 3



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95 96



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96

95 96



97

95 96



100

95 103



101



102



103

Roll # 6 # 26

Roll # 6 # 28

Roll # 4 # 28

104



CLEAN - UP



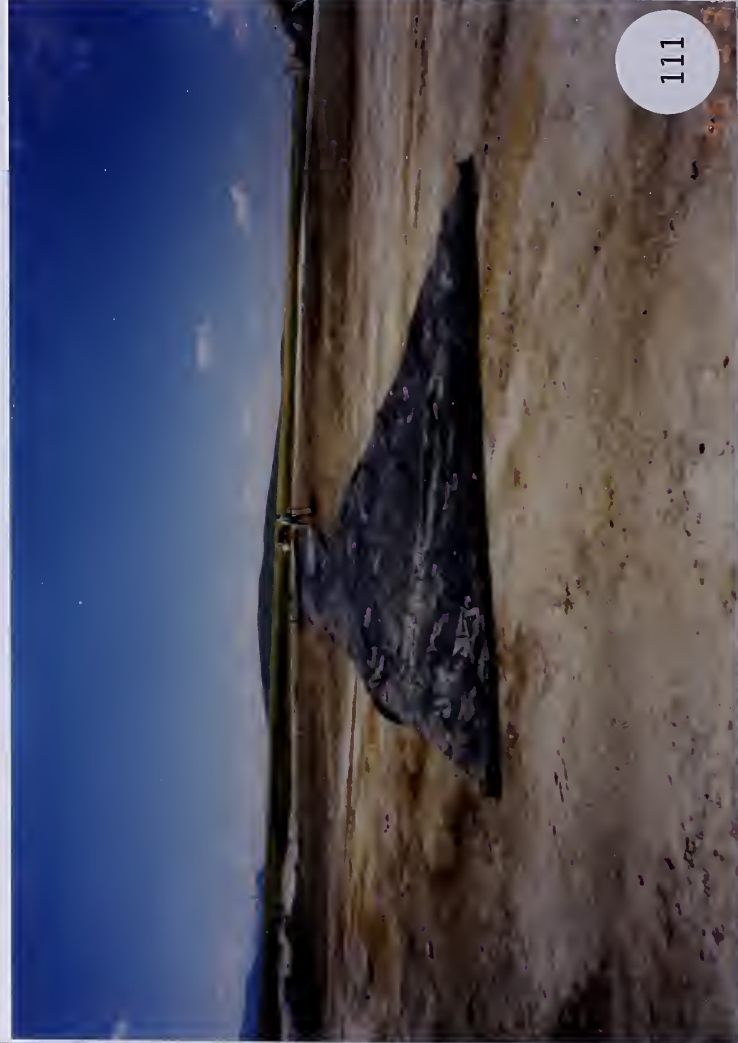
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